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PREFACE.

This book contains solutions of some of the questions in the Oral exercises, and answers to *all* the examples in the Written exercises, of the Second Part of the North American Arithmetic.

To those who have been accustomed to teaching arithmetic analytically, that portion of the Key which relates to the Oral exercises, will be useless. Nor need it be used by *any* teacher, who will *begin*, Part Second with a class, and proceed step by step through every section. But it may too often happen, that a teacher unacquainted with the method of instructing in mental arithmetic, will be called to the instruction of a school, in which the scholars have already made some progress. In such cases, the solutions will be found convenient.

That portion of the Key which relates to the Written Arithmetic, will be found convenient for *all* teachers; as it will save much time in the examination of answers. The advantage of keeping answers to examples out of the text-book is obvious—If the learner have an answer before him, his immediate object will naturally be, to arrive at that answer in his work, with little regard to the reasons why his work leads to it: but, if the answer be unknown, his effort will be, to discover the course, which he shall perceive, *must of necessity* lead to the answer.

ORAL SOLUTIONS.

PART SECOND.

CHAPTER I.

SECTION 1.

Example 6. The figure 1, and one cipher.

7. The figure 1, and two ciphers.

SECTION 2.

1. Six tens.

2. Sixty.

7. One-hundred and fifty.

12. One-hundred and seventy-five.

CHAP. II.

SECTION 1.

6. 9 cents and 7 cents are 16 cents.

SECTION 2.

2. 40 oranges and 20 oranges are 60 oranges.

9. 70 books and 50 books are 120 books.

SECTION 3.

2. 30 fishes and 40 fishes are 70 fishes; 70 fishes and 9 fishes are 79 fishes.

SECTION 5.

1. 25 books and 8 books are 33 books.
2. 7 years and 9 years are 16 years, which will be the son's age. 47 years and 9 years are 56 years, which will be the father's age.

SECTION 6.

1. 29 dollars and 4 dollars are 33; 33 dollars and 5 dollars are 38 dollars.

SECTION 7.

2. 23 cents and 30 cents are 53 cents; 53 cents and 9 cents are 62 cents.
16. 5 and 9 are 14, and 2 are 16, and 8 are 24, and 6 are 30, and 4 are 34.

CHAP. III.

SECTION 1.

3. She must have as many more, as the difference is, between 7 and 12. 7 from 12 leaves 5.
11. He gave the difference between 9 cents and 18 cents. 9 from 18 leaves 9.

SECTION 2.

1. As many of the crew were living, as the difference is, between 30 and 70. 30 from 70 leaves 40.

SECTION 4.

15. 57 and 5 are 62. 5 from 62 leaves 57.
21. 36 and 5 are 41. 5 and 36 are 41. Then 5 from 41 leaves 36. 36 from 41 leaves 5.

SECTION 5.

3. 23 questions and 7 questions are 30 questions. 30 questions and 23 questions are 53 questions.

5. 66 dollars and 30 dollars are 96 dollars. 96 dollars from 100 dollars leaves 4 dollars.

7. 48 dollars and 3 dollars are 51 dollars; 51 dollars and 8 dollars are 59 dollars.

12. Arthur's knife was worth 7 cents more than Walter's, therefore, A. should have *received* 7 cents. But, since A. *paid* 6 cents, he lost 7 cents and 6 cents, which is 13 cents.

22. 8 dollars and 15 dollars are 23 dollars; 23 dollars and 12 dollars are 35 dollars, which is what he paid out. Since he sold the whole for 39 dollars, he gained 4 dollars.

CHAP. IV.

SECTION 1.

2. It will take 5 times as much cloth to make 5 cloaks, as it will to make 1 cloak. 5 times 4 yards are 20 yards.

SECTION 2.

2. 10 and 3. 6 times 10 are 60. 6 times 3 are 18. 60 and 18 are 78. Then 6 times 13 are 78.

SECTION 4.

3. In 1 ounce there are 20 penny-weights. In 4 ounces there are 4 times 20 penny-weights, or 80 penny-weights. 80 penny-weights and 13 penny-weights are 93 penny-weights.

CHAP. V.

SECTION 1.

2. I could buy as many pencils, as there are times 4 cents, in 16 cents. 4 in 16, 4 times.

8. As many times as 7 dollars are contained in 14 dollars, so many yards can be purchased. 7 in 14, 2 times.

16. There were as many rows, as there were times 5 trees. 5 in 30, 6 times.

24. 60 limes are worth as many oranges, as 6 is contained times in 60. 6 in 60, 10 times.

SECTION 2.

7. Each boy must pay as many cents, as 3 is contained times in 24. 3 in 24, 8 times.

20. There are as many sheets in each book, as 7 is contained times in 42. 7 in 42, 6 times.

SECTION 3.

2. 8 is contained in 34, 4 times, and there is 2 over;—therefore he can trim 4 vests, and he will have 2 buttons remaining.

13. 4 is contained in 29, 7 times, and there is 1 over. 7 times 4 is 28, and 1 is 29.

25. As many times as 4 is contained in 15, so many gallon measures can be filled. 4 in 15, 3 times, and 3 over. Therefore, 3 gallon measures can be filled, and there will be 3 quarts over.

29. There are as many hours in 128 minutes, as 60 is contained times in 128. 60 in 128, 2 times and 8 over. *Answer*, 2 hours and 8 minutes.

SECTION 4.

9. He spent 9 times 4 dollars, which is 36 dollars.

10. If he had spent just 9 dollars in the journey, this sum would have allowed him 1 dollar a day;

therefore, as many times 9 dollars as he spent in the whole journey, so many times 1 dollar did he spend in 1 day. 9 in 36, 4 times.

SECTION 5.

12. 7 times 5 are 35; 8 is contained in 35, 4 times, and there is 3 over.

SECTION 6.

10. He sold the flour for 7 times 6 dollars, or 42 dollars. He lost the difference between 48 dollars and 42 dollars. 48 minus 42 is 6.

12. 9 dollars plus 12 dollars are 21 dollars; 21 dollars plus 7 dollars are 28 dollars, which is what three men put in. The fourth man put in the remainder. 40 dollars minus 28 dollars are 12 dollars.

13. There must have been 8 times 15 dollars divided. 8 times 15 are 120.

18. 8 cents and 3 cents are 11 cents. 10 times 11 cents are 110 cents, which is what he sold it for.

19. He sold the melons for 4 times 6 cents, which is 24 cents. 25 cents plus 24 cents are 49 cents. 49 cents minus 12 cents are 37 cents.

33. It will take 7 times 1 man, or 7 men.

34. They will perform 9 times 4 days' work or 36 days' work.

35. 36 days' work are required to dig the cellar; and since 4 men will perform 4 days' work in 1 day, it will take them as many days to complete the work, as there are times 4 in 36. 4 in 36, 9 times.

36. 28 men will perform 28 days' work in 1 day; and since 7 men will perform 7 days' work in 1 day, therefore, it will take 7 men as many

days to clear the land; as there are times 7 in 28. 7 in 28, 4 times.

40. If he had not found any, he would now have 8 cents. 8 cents and 30 cents are 38 cents, which is what he had at first.

45. The man gathered as many times 7 rows, as the boy gathered times 4 rows. 4 in 32, 8 times; 8 times 7 are 56.

51. The second class gains 9 examples a day; and it will overtake the first, in as many days as 9 is contained times in 81. 9 in 81, 9 times.

59. 8 sheep from 15 sheep leave 7 sheep. 8 times 4 dollars are 32 dollars; 7 times 3 dollars are 21 dollars. 32 dollars plus 21 dollars are 53 dollars; 53 dollars minus 7 dollars are 46 dollars.

CHAP. VI.

SECTION 4.

1. 2 cents,—because, there are 2-halves in a whole sheet, and 2 times 1 cent are 2 cents.

3. 1 is 1-half of 2,—because, there are 2 times 1 in 2.

4. 2-thirds of the loaf is worth 2 times as much as 1-third; and 2 times 1 cent is 2 cents. 3-thirds of the loaf, or the whole loaf, is worth 3 times 1 cent, which is 3 cents.

6. 1 is 1-third of 3,—because, there are 3 times 1 in 3. 2 is 2-thirds of 3.

7. 1-fourth of a yard will cost 1 cent. 2-fourths will cost 2 cents. 3-fourths will cost 3 cents. A whole yard will cost 4 cents.

9. 1 is 1-fourth of 4. 2 is 2-fourths of 4. 3 is 3-fourths of 4.

SECTION 5.

2. 2 is 1-half of 2 times 2, which is 4.

4. 3 is 1-half of 2 times 3, which is 6. 4 is 1-half of 2 times 4, which is 8. 7 is 1-half of 2 times 7, which is 14.

9. 3 is 1-third of 3 times 3, which is 9. 4 is 1-third of 3 times 4, which is 12. 6 is 1-third of 3 times 6, which is 18.

14. 3 is 1-fourth of 4 times 3, which is 12. 4 is 1-fourth of 4 times 4, which is 16. 10 is 1-fourth of 4 times 10, which is 40.

SECTION 6.

5. 1-third of 6 is as many times 1, as there are times 3 in 6; 3 in 6, 2 times. 1-third of 15 is as many times 1, as there are times 3 in 15; 3 in 15, 5 times. 1-third of 24 is as many times 1, as there are times 3 in 24; 3 in 24, 8 times.

SECTION 8.

7. 1-fifth of 50 is 10. 4-fifths of 50 is 4 times 10, or 40.

17. 1-seventh of 42 is 6, 3-sevenths is 3 times 6, or 18, which is the number of quills that he would give away. 42 minus 18 is 24, which is the number he would have left.

SECTION 9.

3. 5 is 5-sixths of 6. 1-sixth of 42 is 7; 5-sixths is 5 times 7, which is 35.

SECTION 10.

3. If 5 men will cut 20 cords, 1 man will cut 1-fifth of 20 cords, which is 4 cords; 3 men will cut 3 times 4 cords, which is 12 cords.

SECTION 11.

2. Since 10 is 2-thirds of the required number, 1-half of 10 must be 1-third of that number,—1-half of 10 is 5; since 5 is 1-third of the number, 3 times 5, which is 15, is the number.

21. If 21 workmen can perform 3-fifths of the work, 1-third of 21 workmen can perform 1-fifth of it; 1-third of 21 is 7; if 7 workmen can perform 1-fifth of the work, 5 times 7 workmen, or 35 workmen can perform the whole.

29. 3-ninths plus 4-ninths is 7-ninths; hence the 18 acres must be 2-ninths of the farm. If 18 be 2-ninths, 1-half of 18 acres, which is 9 acres, must be 1-ninth; if 9 acres be 1-ninth, 9 times 9 acres, or 81 acres, must be the whole.

SECTION 13.

1. For 1 dollar you can buy 1-half of a yard,—because, 1 dollar is 1-half of 2 dollars. For 3 dollars you can buy 1 yard and 1-half,—because, in 3 dollars, there is 1 time 2 dollars, and 1-half of another 2 dollars.

6. For 1 dollar you can buy 1-third of a gallon. For 4 dollars you can buy 1 gallon and 1-third,—because, in 4 dollars, there is 1 time 3 dollars and 1-third of another 3 dollars.

12. 2 and 1-fourth times,—because 4 is contained in 9, 2 times and there is 1 over. 3 and 3-fourths times,—because, 4 is contained in 15, 3 times and there is 3 over. 8 and 2-fourths times,—because, 4 is contained in 34, 8 times and there is 2 over.

SECTION 14.

7. As many boys as there are thirds in 3 and 2-thirds. In 1 there are 3-thirds; in 3 there are 3 times 3-thirds, or 9 thirds; 9-thirds plus 2-thirds are 11-thirds.

13. In 1 there are 5-fifths. In 2 there are 2 times 5-fifths, or 10-fifths. In 2 and 3-fifths, there are 2 times 5-fifths plus 3-fifths, or 13-fifths. In 4 and 1-fifth, there are 4 times 5-fifths plus 1-fifth, or 21-fifths.

23. 3 yards and 6-eighths will cost as many dollars, as there are eighths of a yard in 3 yards and 6-eighths. In 1 there are 8-eighths; in 3 there are 3 times 8-eighths, or 24-eighths; 24-eighths plus 6-eighths are 30-eighths.

SECTION 15.

10. 1 and 1-fourth,—because, 4-fourths are contained in 5-fourths, once, and there is 1-fourth over. 3 and 2-fourths,—because, 4-fourths are contained in 14-fourths, 3 times, and there are 2-fourths over. 7 and 3-fourths,—because, 4-fourths are contained in 31-fourths, 7 times, and there are 3-fourths over.

SECTION 16.

5. 31 and 25 are 56. 3-fifths and 4-fifths are 7-fifths, equal to 1 and 2-fifths. 56 plus 1 and 2-fifths is 57 and 2-fifths.

SECTION 17.

3. 7 times 3-fourths are 21-fourths, equal to 5 and 1-fourth.

SECTION 18.

3. 4 times 9 is 36 ; 4 times 2-fifths are 8-fifths, equal to 1 and 3-fifths ; 36 plus 1 and 3-fifths is 37 and 3-fifths.

SECTION 19.

2. 6 and 7-eighths is 1-fifth of 5 times 6 and 7-eighths. 5 times 6 is 30 ; 5 times 7-eighths are 35-eighths, equal to 4 and 3-eighths. 30 plus 4 and 3-eighths is 34 and 3-eighths.

3. The whole line is 9 times 5 and 3-fourths yards long. 9 times 5 yards are 45 yards ; 9 times 3-fourths are 27-fourths, equal to 6 and 3-fourths. 45 yards plus 6 and 3-fourths yards are 51 and 3-fourths yards.

SECTION 20.

8. 1-fifth of 1 is 1-fifth ; 1-fifth of 4 is 4 times 1-fifth of 1, which is 4-fifths of 1.

11. If only 1 barrel were divided, 1 man would receive 1-seventh of a barrel ; therefore if 3 barrels were divided 1 man would receive 3-sevenths of a barrel.

23. 1-fourth of 36 is 36-fourths of 1—equal to 9 whole ones.

SECTION 21.

6. 1-seventh of 26 is 26-sevenths of 1—equal to 3 and 5-sevenths.— Or, we may say,—1-seventh of 26 is 3 and 5-sevenths,—because, in 26 there are 3 times 7 and 5 over,—the 5 over being 5-sevenths of another 7.

7. 1 man will receive 1-fifth of 48 bushels. 1-fifth of 48 bushels is 9 bushels and 3-fifths,—because, in 48, there are 9 times 5 and 3-fifths of another 5.

35. 5 men can clear the land in 1-fifth of 29 days. 1-fifth of 29 days is 5 and 4-fifths days.

38. Since a man can do 8 times as much work in 8 days as he can in 1 day, to hoe the corn in 8 days, it would take 1-eighth of 24 men. 1-eighth of 24 is 3.

SECTION 22.

3. If 22 bushels of wheat will make 4 barrels of flour, 1-fourth of 22 bushels will make 1 barrel; 1-fourth of 22 is 5 and 2-fourths. If 5 and 2-fourths bushels will make 1 barrel, 6 times 5 and 2-fourths bushels will make 6 barrels: 6 times 5 is 30, 6 times 2-fourths are 12-fourths, equal to 3. 30 plus 3 is 33.—Or, we may say,—It will take 6-fourths of 22 bushels to make 6 barrels; 1-fourth of 22 is 5 and 2-fourths, 6-fourths of 22 is 6 times 5 and 2-fourths; 6 times 5 is 30, 6 times 2-fourths are 12-fourths, equal to 3. 30 plus 3 is 33.

SECTION 23.

26. He received 4-fifths of 32 bushels. 1-fifth of 32 is 6 and 2-fifths; 4-fifths of 32 is 4 times 6 and 2-fifths; 4 times 6 is 24, 4 times 2-fifths are 8-fifths, equal to 1 and 3-fifths. 24 plus 1 and 3-fifths is 25 and 3-fifths.

SECTION 24.

6. If 6 be 5-sixths of some number, 1-fifth of 6 is 1-sixth of that number. 1-fifth of 6 is 1 and 1-fifth; then, if 1 and 1-fifth be 1-sixth of the required number, 6 times 1 and 1-fifth is the number. 6 times 1 is 6, 6 times 1-fifth is 6-fifths, equal to 1 and 1-fifth. 6 plus 1 and 1-fifth is 7 and 1-fifth.

15 If he saved 3-sevenths of his wages, the 30 cents which he spent, must have been the other 4-sevenths. If 30 cents be 4-sevenths of his wages, 1-fourth of 30 cents must be 1-seventh of his wages. 1-fourth of 30 is 7 and 2-fourths. If 7 and 2-fourths cents be 1-seventh of his wages, 7 times 7 and 2-fourths cents must be his wages. 7 times 7 is 49, 7 times 2-fourths are 14 fourths, equal to 3 and 2-fourths. 49 cents plus 3 cents and 2-fourths, are 52 cents and 2-fourths.

SECTION 25.

6. $\frac{1}{2}$ is equal to $\frac{1}{2}$ of $\frac{12}{12}$, which is $\frac{6}{12}$. $\frac{1}{2}$ is equal to $\frac{1}{2}$ of $\frac{16}{16}$, which is $\frac{8}{16}$. $\frac{1}{2}$ is equal to $\frac{1}{2}$ of $\frac{20}{20}$, which is $\frac{10}{20}$.

11. $\frac{1}{4}$ is equal to $\frac{1}{4}$ of $\frac{8}{8}$, which is $\frac{2}{8}$. $\frac{1}{4}$ is equal to $\frac{1}{4}$ of $\frac{12}{12}$, which is $\frac{3}{12}$. $\frac{1}{4}$ is equal to $\frac{1}{4}$ of $\frac{16}{16}$, which is $\frac{4}{16}$.

20. $\frac{1}{4}$ is equal to $\frac{2}{8}$, $\frac{4}{4}$ is 4 times $\frac{2}{8}$, or $\frac{8}{8}$. $\frac{8}{8}$ plus $\frac{5}{8}$ is $\frac{13}{8}$.

SECTION 26.

6. 3 in 3, once; 1 is a new numerator: 3 in 6, 2 times; 2 is a new denominator. *Answer*, $\frac{1}{2}$.

SECTION 27.

3. $\frac{1}{2}$ of $\frac{1}{2}$ is 6 times less than $\frac{1}{2}$; 6 times 5 is 30, which is the new denominator. *Answer*, $\frac{1}{30}$.

20. In 1 lot there was $\frac{1}{3}$ of $\frac{2}{3}$ of an acre, and in 3 lots there was $\frac{3}{3}$ of $\frac{2}{3}$ of an acre. $\frac{1}{3}$ of $\frac{1}{3}$ is $\frac{1}{15}$, $\frac{1}{3}$ of $\frac{2}{3}$ is $\frac{2}{15}$; $\frac{2}{3}$ of $\frac{2}{3}$ is 3 times $\frac{2}{15}$, or $\frac{6}{15}$.

SECTION 28.

9. $\frac{1}{3}$ of $\frac{12}{12}$ is $\frac{4}{12}$; $\frac{1}{4}$ of $\frac{12}{12}$ is $\frac{3}{12}$; $\frac{1}{6}$ of $\frac{12}{12}$ is $\frac{2}{12}$.

23. 8 times 7 is 56, which is a common denom-

inator. $\frac{1}{8}$ of $\frac{56}{56}$ is $\frac{7}{56}$, $\frac{3}{8}$ is 3 times $\frac{7}{56}$, or $\frac{21}{56}$. $\frac{1}{7}$ of $\frac{56}{56}$ is $\frac{8}{56}$, $\frac{2}{7}$ is 2 times $\frac{8}{56}$, or $\frac{16}{56}$. $\frac{21}{56}$ plus $\frac{16}{56}$ is $\frac{37}{56}$.

SECTION 29.

2. 5 dollars plus 5 dollars are 10 dollars. The common denominator for *fourths* and *tenths* is 40. $\frac{1}{4}$ of $\frac{40}{40}$ is $\frac{10}{40}$, $\frac{3}{4}$ is $\frac{30}{40}$. $\frac{1}{10}$ of $\frac{40}{40}$ is $\frac{4}{40}$, $\frac{7}{10}$ is $\frac{28}{40}$. $\frac{30}{40}$ plus $\frac{28}{40}$ is $\frac{58}{40}$, equal to $1\frac{18}{40}$, or $1\frac{9}{20}$. Then 10 dollars plus 1 dollar and $\frac{9}{20}$ is 11 dollars and $\frac{9}{20}$.

5. 7 times 4 is 28, a common denominator. $\frac{1}{4}$ of $\frac{28}{28}$ is $\frac{7}{28}$, $\frac{2}{7}$ is $\frac{8}{28}$. $\frac{1}{4}$ of $\frac{28}{28}$ is $\frac{7}{28}$. $\frac{8}{28}$ plus $\frac{7}{28}$ is $\frac{15}{28}$, which is the part of the loaf that the first and second soldiers took. $\frac{28}{28}$ minus $\frac{15}{28}$ is $\frac{13}{28}$, which is the part of the loaf that the third soldier received.

7. $\frac{3}{4}$ is equal to $\frac{9}{12}$; and $\frac{2}{3}$ is equal to $\frac{8}{12}$. $\frac{9}{12}$ plus $\frac{8}{12}$ is $\frac{17}{12}$, or $1\frac{5}{12}$. 2 barrels minus 1 barrel and $\frac{5}{12}$ is $\frac{7}{12}$ of a barrel.

10. 25 plus 2 is 27. $\frac{6}{8}$ is equal to $\frac{60}{80}$, and $\frac{3}{10}$ is equal to $\frac{24}{80}$. $\frac{60}{80}$ plus $\frac{24}{80}$ is $\frac{84}{80}$, or $1\frac{4}{80}$, or $1\frac{1}{20}$. 27 dollars plus $1\frac{1}{20}$ dollars, plus 3 dollars, are $31\frac{1}{20}$ dollars.

SECTION 30.

3. You can buy as many pairs; as $\frac{3}{4}$ of a dollar is contained times in 6 dollars. In 1 there is $\frac{4}{4}$, in 6 there is 6 times $\frac{4}{4}$ or $\frac{24}{4}$; $\frac{3}{4}$ in $\frac{24}{4}$, 8 times. *Answer*, 8 pairs.

7. As many yards can be bought, as there are times $\frac{3}{8}$ of a dollar in 4 dollars. 1 dollar is equal to $\frac{8}{8}$ of a dollar, 4 dollars are equal to $\frac{32}{8}$ of a dollar. $\frac{3}{8}$ in $\frac{32}{8}$, 10 $\frac{3}{8}$ times.— *Remark*. The numerator 3 is contained in the numerator 32, 10 times, and there is a remainder of 2; this 2 is $\frac{2}{3}$ of another time 3.

15. He can hoe $\frac{3}{4}$ of the field in as many days, as $\frac{1}{3}$ is contained times in $\frac{3}{4}$. $\frac{1}{3}$ is equal to $\frac{4}{12}$, and $\frac{3}{4}$ is equal to $\frac{9}{12}$. $\frac{4}{12}$ in $\frac{9}{12}$, $2\frac{1}{4}$ times.

SECTION 32.

5. 10 hours a day, for 8 days, would be 80 hours. Then, if he should travel 12 hours a day, he would be as many days in performing the journey, as there are times 12 in 80. 12 in 80, $6\frac{2}{3}$ times, or $6\frac{2}{3}$ times. *Answer*, 6 days and $\frac{2}{3}$.

8. He paid as many times 4 dollars, as there are times 9 dollars in 100 dollars. 9 in 100, $11\frac{1}{9}$ times. 11 times 4 is 44; $\frac{1}{9}$ of a time 4, or $\frac{1}{9}$ of 4, is $\frac{4}{9}$ of 1. *Answer*, 44 dollars and $\frac{4}{9}$.

9. Since $\frac{2}{3}$ of the pole is under the water, the $3\frac{1}{2}$ feet above the water, must be $\frac{1}{3}$ of the length. 5 times 3 is 15; 5 times $\frac{1}{2}$ is $\frac{5}{2}$, or $2\frac{1}{2}$; 15 plus $2\frac{1}{2}$ is $17\frac{1}{2}$.

10. $\frac{3}{4}$ is equal to $\frac{6}{8}$; $\frac{6}{8}$ plus $\frac{1}{8}$ is $\frac{7}{8}$. Then $2\frac{1}{2}$ feet must be $\frac{1}{8}$ of the length of the pole. 8 times 2 is 16; 8 times $\frac{1}{2}$ is $\frac{8}{2}$, or 4; 16 plus 4 is 20.

11. At 9 shillings a bushel, 8 bushels would be worth 72 shillings. A. must return as many bushels as 7 is contained times in 72. 7 in 72, $10\frac{2}{7}$ times.

15. He gets $\frac{1}{16}$ of 1 bushel for grinding $\frac{1}{16}$ of 1 bushel. Therefore, he will get $\frac{1}{16}$ of 16 bushels, for grinding $\frac{1}{16}$ of 16 bushels. $\frac{1}{16}$ of 16 bushels is equal to 1 bushel.

17. As many times as there are 5 sheep in 35 sheep, so many dollars you must pay for pasturing 35 sheep, 1 month; 5 in 35, 7 times. For pasturing 7 months, you must pay 7 times 7 dollars, or 49 dollars.

18. If 3 horses eat 1 ton in 1 month, 1 horse will

eat $\frac{1}{3}$ of 1 ton in 1 month; and 4 horses will eat $\frac{4}{3}$ of 1 ton in 1 month. 5 tons will last 4 horses as many months, as there are times $\frac{4}{3}$ in 5. 5 is equal to $1\frac{1}{3}$. $\frac{4}{3}$ in $1\frac{1}{3}$, $3\frac{3}{4}$ times.

19. 20 dollars was $\frac{4}{5}$ of what he paid; 5 dollars was $\frac{1}{5}$, and 15 dollars was the whole.

21. In 1 hour, the first tap will let off $\frac{1}{5}$ of the contents, and the second, $\frac{1}{7}$. $\frac{1}{5}$ is equal to $\frac{7}{35}$, and $\frac{1}{7}$ is equal to $\frac{5}{35}$. Then both taps, in 1 hour, will let off $\frac{7}{35}$ plus $\frac{5}{35}$, which is $\frac{12}{35}$ of the contents. They will discharge the cistern in as many hours, as there are times $\frac{12}{35}$ in $\frac{35}{35}$. 12 in 35, $2\frac{11}{12}$ times.

26. $\frac{1}{4}$ is equal to $\frac{3}{12}$, $\frac{1}{3}$ is equal to $\frac{4}{12}$, $\frac{1}{6}$ is equal to $\frac{2}{12}$. Then, $\frac{3}{12}$ plus $\frac{4}{12}$ plus $\frac{2}{12}$ is $\frac{9}{12}$, or $\frac{3}{4}$. Hence 36 scholars must be $\frac{1}{4}$ of the school. 4 times 36 scholars are 144 scholars.

27. The shadow of the post is equal to $\frac{3}{4}$ of the height of the post; therefore, the shadow of the steeple is equal to $\frac{3}{4}$ of the height of the steeple. If 90 feet be $\frac{3}{4}$ of the height of the steeple, $\frac{1}{3}$ of 90 feet, which is 30 feet, is $\frac{1}{4}$ of the height. 30 feet being $\frac{1}{4}$ of the height, 4 times 30 feet, or 120 feet is the whole height.

32. The hound gains 3 rods by running 10 rods; and since he has 35 rods to gain, he must run as many times 10 rods, as there are times 3 rods in 35 rods. 3 in 35, $11\frac{2}{3}$ times. 11 times 10 is 110; $\frac{1}{3}$ of 10 is $3\frac{1}{3}$, $\frac{2}{3}$ of 10 is $6\frac{2}{3}$. 110 plus $6\frac{2}{3}$ is $116\frac{2}{3}$.

34. 5 dollars, which was the price of the bridle, was a certain part of the whole cost; the price of the saddle was 3 such parts, and the price of the horse was 27 such parts. 1 part plus 3 parts plus 27 parts are 31 parts. Then, 31 times 5 dollars, or 5 times 31 dollars, are 155 dollars.

36. $\frac{1}{2}$ of what he had, plus $\frac{1}{4}$, is equal to $\frac{3}{4}$ of what he had. What he had was $\frac{4}{4}$, and as much more is $\frac{4}{4}$. Then $\frac{4}{4}$ plus $\frac{4}{4}$ plus $\frac{3}{4}$ is $\frac{11}{4}$. Hence 70 cents is $\frac{4}{11}$ of what he had. If 70 be $\frac{4}{11}$ of some number, $\frac{1}{11}$ of 70 must be $\frac{1}{4}$ of that number; $\frac{1}{11}$ of 70 is $6\frac{4}{11}$; 4 times $6\frac{4}{11}$ is $25\frac{5}{11}$.

37. The expense of the whole for 1 week, was $\frac{1}{5}$ of 85 dollars, which is 17 dollars. The servant's board cost a certain part of 17 dollars, the son's board cost 3 such parts, and the father's cost 6 such parts. 1 part plus 3 parts plus 6 parts are 10 parts. Then the servant's board cost $\frac{1}{10}$ of 17 dollars, which is $1\frac{7}{10}$ dollar. The son's board cost 3 times $1\frac{7}{10}$ dollar, which is $5\frac{1}{10}$ dollars. The father's board cost twice $5\frac{1}{10}$ dollars, which is $10\frac{1}{5}$ dollars.

ANSWERS

TO

EXAMPLES IN WRITTEN ARITHMETIC.

PART SECOND.

CHAPTER I

NUMERATION.

SECTION 1.

- Ex. 1.* Five hundred and eight.
2. Three thousand, eight hundred and sixty-one.
 3. One thousand and fifty.
 4. Twenty-seven thousand, and four hundred.
 5. Thirteen thousand, and eight.
 6. Twenty-nine thousand, one hundred and eleven.
 7. One hundred twelve thousand, and six hundred.
 8. Thirty thousand, and thirty.
 9. Two hundred six thousand, and two hundred and nine.
 10. Five hundred thousand, and eighty-eight.
 11. Seven million, four hundred thirty-two thousand, and forty.
 12. Two hundred thousand, and five.

13. Nine million, seventy thousand, six hundred and thirty-eight.

14. Three million, eighteen thousand, one hundred and three.

15. Sixteen million, nine hundred seventy-four thousand, and thirty-six.

16. Three hundred forty million, seven thousand, one hundred and forty.

17. Thirty-one million, thirty-one thousand, and thirty-two.

18. Nine million, nine hundred and eight thousand.

19. One million and one.

20. Ninety thousand, and forty.

21. One hundred seven thousand, and ninety.

22. Six million, three hundred and four.

23. Seventy-seven million, and ten thousand.

24. One hundred million, one hundred thousand, and eleven.

25. Two hundred twenty thousand, and two.

26. Eleven million, three hundred thirty-three thousand, one hundred and eleven.

27. Two hundred sixteen million, ninety thousand, and nine hundred.

28. Ten million, and four.

29. Eight billion, and five hundred.

30. Fifty billion, and thirty-six.

31. One billion, seven hundred thousand, and seven.

32. Eight trillion, four hundred billion, fifty-two million, and six hundred.

33. Eight billion, six hundred thirty-one million, and eight thousand.

34. Twenty-two million, and four.

35. Nine hundred nineteen billion, and sixty.

36. Eighty-six trillion, one million, one hundred thousand, and eighteen.

SECTION 2.

1.	70	13.	700 009
2.	48	14.	13 016 019
3.	124	15.	105 002 001
4.	609	16.	6 040 006 000
5.	3 600	17.	21 100 000 000
6.	2 450	18.	5 014 070 001 236
7.	19 068	19.	122 000 000 847 000
8.	5 731	20.	10 000 987 730
9.	36 740	21.	700 000 000 036 000
10.	268 000	22.	12 000 842 780
11.	905 100	23.	29 809 000 001 018
12.	18 735	24.	823 010 008 015

CHAP. II.

ADDITION.

SECTION 1.

1.	Performed.	4.	19897
2.	158	5.	99879
3.	1499		

SECTION 2.

1.	Performed.	3.	27597
2.	21620	4.	21106

5.	23 273	20.	11 907 dollars.
6.	214	21.	2 490 dollars.
7.	1 088	22.	3 334
8.	934	23.	976 dollars.
9.	4 889	24.	39 399
10.	4 887	25.	* * * *
11.	92 054	26.	1 799
12.	450 518	27.	7 454 dollars.
13.	5 958	28.	319 dollars.
14.	8 860 705	29.	9 610 dollars.
15.	41 679 451	30.	500 sheep.
16.	568 dollars.		1825 dollars.
17.	1 733 dollars.	31.	2 576 406.
18.	382 acres.	32.	21 319 643 inhab.
19.	340 miles.	33.	12 856 092 inhab.

CHAP. III.

SUBTRACTION.

SECTION 1.

1.	Performed.	5.	701 423
2.	13	6.	223 sheep.
3.	426	7.	132 dollars.
4.	1 043		

SECTION 2.

1.	Performed.	4.	2 308
2.	483	5.	2 711
3.	4 502	6.	Performed.

7.	1 455	18.	500 000 inhab.
8.	2 591	19.	10 500 000 inhab.
9.	34 049	20.	8 940 feet.
10.	25	21.	1 405 dollars.
11.	38	22.	318 dollars.
12.	101	23.	* * *
13.	26 620	24.	* *
14.	9 956	25.	6 casks.
15.	615 dollars.		777 gallons.
16.	6 516 dollars.	26.	766
17.	1 017 537		

SECTION 3.

1.	82 dollars.	8.	lost 1 dollar.
2.	255 dollars.	9.	39 016
3.	* * * *	10.	447 dollars.
4.	1 955 dollars.	11.	A. D. 1706
5.	11 450 dollars.	12.	57 dollars.
6.	sum 173. rem. 130	13.	7 013 006 200
7.	292 barrels.		

CHAP. IV.

MULTIPLICATION.

SECTION 1.

1.	Performed.	5.	1 680 484
2.	244	6.	690 bushels.
3.	1 048	7.	2 048
4.	27 396		

SECTION 2.

1.	Performed.	15.	128 724
2.	20 944	16.	4 226 220
3.	3 816	17.	2 008
4.	30 875	18.	1 900
5.	29 120	19.	18 516
6.	93 cents.	20.	122 800
7.	96 cents.	21.	3 010 273
8.	85 cents.	22.	63 000 045
9.	150 dollars.	23.	214 310 000
10.	805 dollars.	24.	3 712 257 236
11.	72	25.	48
12.	144	26.	245
13.	1 710	27.	2 455
14.	45 171		

SECTION 3.

1.	Performed.	14.	887 124
2.	1 200	15.	513 trees.
3.	28 530	16.	10 875 dollars.
4.	207 333	17.	1 924 dollars.
5.	5 508 426	18.	1 222 miles.
6.	34 716 681	19.	48 564 dollars.
7.	Performed	20.	32 870 times.
8.	40 033 592	21.	1 175 dollars.
9.	143 370	22.	2 655 dollars.
10.	7 153 515	23.	77 pieces.
11.	764 032		2 233 yards.
12.	36 128 144	24.	378 yards.
13.	486 920		2 268 dollars.

25.	2 520 dollars.	30.	216 days' work.
26.	139 520 rods.	31.	216 days.
27.	401 600 rods.	32.	611 days.
28.	11 904 dollars.	33.	198 men.
29.	61 320 miles.	34.	182 days.

SECTION 4.

1.	Performed.	18.	7 000 cents.
2.	2 933 904	19.	Performed.
3.	57 963 906	20.	456
4.	742 495 485	21.	9 288 miles.
5.	Performed.	22.	1 148 bushels.
6.	55 300	23.	15 300
7.	295 200	24.	34 020
8.	189 120	25.	126 315
9.	Performed.	26.	8 000 dollars.
10.	2 008 800	27.	528 750 letters.
11.	68 490 000	28.	13 734 trees.
12.	38 760 000		13 830 138 apples.
13.	50	29.	600 days.
14.	1 700	30.	1 000 men.
15.	49 000	31.	81 900 fishes.
16.	600 cents.	32.	811 188 378
17.	2 500 cents.		

CHAP. V.

DIVISION.

SECTION 1.

1.	Performed.	3.	23
2.	2	4	312

5.	1 221	7.	212
6.	23		

SECTION 2.

1.	Performed.	27.	13 barrels.
2.	8 times.	28.	67 sheep.
3.	71 times.	29.	64 tons.
4.	81 times.	30.	35 yards.
5.	812 times.	31.	1 427 soldiers.
6.	523 times.	32.	492 muskets.
7.	42 wagons.	33.	10 dollars.
8.	82 yards.	34.	19 dollars.
9.	41 hours.	35.	19 biscuit.
10.	23	36.	59 trees.
11.	32	37.	62 fishes.
12.	81	38.	197 dollars.
13.	Performed.	39.	56 miles.
14.	121 times.	40.	242 dollars.
15.	112 times.	41.	29 668 dollars.
16.	321 times.	42.	457 men.
17.	132 times.	43.	6 men.
18.	1 683 times.	44.	6
19.	317	45.	16 dollars.
20.	753	46.	16
21.	Performed.	47.	13
22.	203 times.	48.	Performed.
23.	203 times.	49.	9
24.	803 times.	50.	1 178
25.	320 times.	51.	5 683
26.	1 500 times.	52.	11 256

53.	1 956	58.	1 143 times, 6 over.
54.	Performed.	59.	81 quo. 1 rem.
55.	186 sheep.	60.	279 quotient.
	3 dollars.	61.	80 quo. 4 rem.
56.	19 suits.	62.	18 quo. 1 rem
	1 yard over.	63.	163 quo. 2 rem.
57.	772 times, 5 over.		

SECTION 3.

1.	Performed.	19.	9 315 times,
2.	1 432 times, 3 over.		54 over.
3.	12 672 times.	20.	2 times.
4.	16 257 times,	21.	21 times, 309 over.
	5 over.	22.	193 times, 239 over.
5.	2 685 750 times,	23.	2 times.
	1 over.	24.	66 times, 160 over.
6.	2 177 245 times,	25.	Performed.
	3 over.	26.	118 quo. 451 rem.
7.	1 291 416 times.	27.	45 414 quo.
8.	Performed.		6 rem.
9.	8 781 times, 1 over.	28.	174 quo. 50 rem.
10.	7 802 times, 5 over.	29.	115 quo. 446 rem.
11.	150 250 times.	30.	18 541 quo.
12.	23 090 times,		27 rem.
	5 over.	31.	636 quo. 125 rem.
13.	Performed.	32.	46 288 quo. 3 rem.
14.	696 times, 4 over.	33.	319 quo. 174 rem.
15.	1 309 times, 2 over.	34.	14 quo. 587 rem.
16.	17 times, 5 over.	35.	36 944 quo.
17.	30 times, 35 over.		24 rem.
18.	1391 ts., 17 over.	36.	387 acres

37.	14 months.	42.	82 hogsheads.
38.	68 days.	43.	313 hhgs.
39.	43 dollars.		2 gals. left.
40.	7 dollars a day.	44.	16 pounds.
41.	272 dollars.	45.	57 quo. 320 rem.

SECTION 4

1.	Performed.	21.	Performed.
2.	122 335 times,	22.	158 quo.
	62 over.	23.	16 dollars.
3.	21 times, 74 over.	24.	28 times.
4.	9 times, 1 578 over.	25.	8 dollars.
5.	2 015 times, 3 over.	26.	61 quo.
6.	1 126 times,	27.	17 quo. 27 rem.
	100 over.	28.	3 quo. 24 rem.
7.	2 times.	29.	60 quo. 2 rem.
8.	1 304 quo. 37 rem.	30.	31 quo. 3 rem.
9.	1 418 quo. 89 rem.	31.	135 barrels.
10.	62 times, 531 over.	32.	129 acres.
11.	22 times, 263 over.	33.	138 acres.
12.	21 times,	34.	30 days.
	3 421 over.	35.	105 hogsheads.
13.	31 times, 6 140 over.	36.	23 hats. 3 dols.
14.	24 times.	37.	45 oxen.
15.	43 times, 5 over.		15 dols.
16.	40 times.	38.	19 096 p. 341 b.
17.	7 times, 48 over.	39.	37 dollars.
18.	54 dollars.	40.	148 trees.
19.	6 dollars 42 cents.	41.	24 miles.
20.	19 dollars 37 cents.	42.	1244 dollars

SECTION 5.

1.	800 000 000 inhab.	24.	16 months.
2.	9 442 215 dols.	25.	11 months.
3.	190 years.	26.	407 dollars.
4.	25 200 000	27.	426 barrels.
5.	3 days.	28.	558 dollars.
6.	36 days.	29.	973 dollars.
7.	11 875 000 miles.	30.	48 cows.
8.	886 144 miles.	31.	208 dollars.
9.	133 C, 160 dols. over.	32.	8 cows.
10.	293 dollars.	33.	24 dollars.
11.	2 964 dollars.	34.	24
12.	228 barrels.	35.	169 miles.
13.	228 times.	36.	16 hhds. 5 bus.
14.	342 dollars.	37.	23 days.
15.	112 acres.	38.	7 miles.
16.	112 times.	39.	17 oxen. 7 sheep.
17.	254 dollars.	40.	436 dollars.
18.	40 911 dollars.	41.	1 376 notes.
19.	lost 410 dols.	42.	229 dollars.
20.	1 200 acres.	43.	6 886
21.	21 dollars.	44.	71
22.	18 192 dollars.	45.	9 600
23.	1 160 gallons.		

SECTION 6.

1.	8 600 cents.	5.	Performed.
2.	758 cents.	6.	\$144.38
3.	\$37	7.	\$545.27
4.	\$5.34	8.	\$126.44

9.	\$514.37	39.	\$7.20
10.	\$24.37	40.	\$6.40
11.	\$79.64	41.	\$38.82
12.	\$140.17	42.	\$28.75
13.	\$32.67	43.	\$4.80
14.	\$23.75	44.	\$18.60
15.	\$2.13	45.	\$11.76
16.	\$41.32	46.	\$102.20
17.	\$295.06	47.	\$86
18.	Performed.	48.	\$12.84
19.	\$129.48	49.	\$10920.40
20.	\$5 358.88	50.	\$550.40
21.	\$50.58	51.	\$11 297.70
22.	93 cents.	52.	\$13.80
23.	\$753 95	53.	\$61.92
24.	\$3.96	54.	\$294
25.	\$5 94	55.	\$49.50
26.	\$5.93	56.	\$709.75
27.	\$1.85	57.	\$2 144.52
28.	\$16.50	58.	Performed.
29.	\$263.06	59.	337 times.
30.	\$153.75	60.	74 times.
31.	\$133.20	61.	30 times.
32.	Performed.	62.	46 834 times.
33.	\$4.32	63.	43 pencils.
34.	\$366.17	64.	17 pounds.
35.	\$6	65.	43 days.
36.	\$8	66.	14 cents.
37.	\$8.17	67.	\$3.19
38	\$157 642.92	68.	\$5.41

69.	Performed.	74.	\$ 607.62. 6 rem.
70.	\$ 125.24. 36 rem.	75.	\$ 45.10
71.	\$ 28.75	76.	\$ 394.40
72.	\$ 1.58. 6 rem.	77.	825 bushels.
73.	\$ 11.67		

SECTION 8.

1.	Performed.	23.	216 doses.
2.	Performed.	24.	20 nails.
3.	895 farthings.	25.	1 015 yards.
4.	£ 9 11s. 9d. 3qr.	26.	1 283 quarters.
5.	1 211 pence.		427 Fl. ells, 2qr.
6.	13s. 5d. 3qr.	27.	12 nails.
7.	97 times, 4 over.	28.	2 920 yards.
8.	Performed.	29.	64 pints.
9.	Performed.	30.	3 775 pints.
10.	2 436dwt.	31.	257bu. 2pk.
11.	3lb. 5oz. 9dwt.	32.	70 bushels.
12.	5 268 grains.	33.	263bu. 1pk.
13.	4lb. 1oz. 5dwt. 1gr.	34.	2 016 gills.
14.	2 240 pounds.	35.	18hhd. 1gal. 2qt.
15.	4 042 589 drams.	36.	\$ 60.48
16.	13r. 17cwt. 3qr.	37.	\$ 675.36.
	14lb.	38.	2hhd. 10gal. 3qt. 1pt.
17.	\$ 1 166.79	39.	648 pints.
18.	176 firkins.	40.	90kil. 1fir. 5gal. 2qt.
19.	238 scruples.	41.	1 152 bottles.
20.	14lb 6 $\frac{3}{4}$ 33	42.	6 cents.
21.	721 doses.	43.	6bl. 1kil. 3qts.
22.	\$ 36	44.	1 294 inches.

- | | |
|--|--|
| <p>45. 273yd. 2ft. 7in.
1bar.</p> <p>46. 16 000 rods.</p> <p>47. 21 600 miles.</p> <p>48. 70yd. 1ft. 9in.</p> <p>49. 6yd. 0ft. 8in.</p> <p>50. 104 square inches.</p> <p>51. 448 square rods.
2A. 3R. 8r.</p> <p>52. 72 square yards.</p> <p>53. 64 cubic inches.</p> <p>54. 3ft. 316in.</p> <p>55. 86 400 inches.</p> | <p>56. 300 cubic feet,
18ft. w. 12 c. ft.
2c. 2ft. w. 12c. ft.</p> <p>57. 128 cubic feet.</p> <p>58. 31 536 000 seconds
in a common year.
31 622 400 seconds
in a leap year.
31 556 928 seconds
in a solar year.</p> <p>59. 82 080 minutes.</p> <p>60. 3 258 720 times.</p> <p>61. 4 years 272 days.</p> |
|--|--|

SECTION 9.

- | | |
|---|---|
| <p>1. Performed.</p> <p>2. £135 12s. 11d. 3qr.</p> <p>3. £531 8s. 10d. 3qr.</p> <p>4. £16 18s. 10d.</p> <p>5. 8lb. 11oz. 18dwt.
4gr.</p> <p>6. 13lb. 5oz. 3dwt. 20gr.</p> <p>7. 41r. 16cwt. 0qr.
21lb. 1oz. 11dr.</p> <p>8. 8r. 13cwt. 3qr. 9lb.
3oz. 2dr.</p> <p>9. 8lb 4$\frac{2}{3}$ 13 2$\frac{1}{2}$ 6gr.</p> <p>10. 5lb 11$\frac{2}{3}$ 53 0$\frac{1}{2}$ 15gr.</p> <p>11. 124yd. 3qr. 1na.</p> <p>12. 303E. ells 0qr. 2na.</p> | <p>13. 1 233bu. 1pk. 7qt.
1pt.</p> <p>14. 972bu. 3pk. 3qt. 1pt.</p> <p>15. 569hhd. 51gal.
3qt. 1pt.</p> <p>16. 12r. 1p. 101gal. 2qt.</p> <p>17. 48bl. 0kil. 0fir. 0gal
1qt. 1pt.</p> <p>18. 45bl. 1kil. 1fir. 0gal.
1qt. 1pt.</p> <p>19. 80yd. 1ft. 2in. 2bar.</p> <p>20. 86ml. 3fur. 28rd.</p> <p>21. 122yd. 6ft. 129in.</p> <p>22. 548A. 3R. 38rd.</p> <p>23. 27T. 15ft. 754in.</p> |
|---|---|

24.	29c. 6ft. w. 6c. ft.	26.	19r. 251d. 7h.
25.	4r. 144d. 2h.		44m. 43s.
	29m. 39s.		

SECTION 10.

1.	Performed.	14.	53bu. 1pk.
2.	£57 2s. 11d.	15.	57gal. 1qt.
3.	6s. 7d. 1qr.	16.	34gal. 1qt. 1pt.
4.	£780 16s. 1d. 3qr.	17.	4bl. 0kil. 1fir.
5.	1lb. 10oz. 10dwt.		1gal. 1qt.
6.	3lb. 3oz. 6dwt.	18.	14bl. 0kil. 1fir.
7.	8r. 4cwt. 2qr. 15lb.	19.	2ft. 1in.
8.	12r. 6cwt.	20.	3m. 4fur. 8r.
9.	1lb 0 $\frac{3}{4}$ 5 $\frac{3}{4}$ 0 $\frac{3}{4}$ 4gr.	21.	88 acres.
10.	2 $\frac{3}{4}$ 6 $\frac{3}{4}$	22.	1r. 46ft.
11.	45yd. 1qr. 3na.	23.	1r. 334d. 5h. 10m.
12.	38yd. 3qr. 1na.	24.	43d. 17h.
13.	82bu. 2pk. 0qt. 1pt.		

SECTION 11.

1.	Performed.	10.	£76 1s. 8d.
2.	£2 648 9s. 5d. 3qr.	11.	98lb. 2oz. 19dwt.
3.	£356 11s. 10d.		5gr.
4.	£45 179 8s. 1d. 2qr.	12.	9oz. 10dwt. 16gr.
5.	£6 020 6s.	13.	60r. 19cwt.
6.	£2 584 19s. 4d. 2qr.	14.	7r. 7cwt. 0qr. 11lb.
7.	£118 3s.	15.	267yd. 0qr. 3na.
8.	£80 350 4s. 3d.	16.	1 658yd. 0qr. 2na.
9.	£11 5s. 11d. 2qr.	17.	169bu. 3pk. 0qt. 1pt.

18.	48bu. 0pk. 3qt.	23.	47lea. 1m. 7fur. 8r.
19.	1T. 1p. 1hhd. 21gal. 2qt.	24.	1002m. 1fur. 26r.
20.	10hhd. 16gal. 3qt.	25.	221A. 2R. 2r.
21.	46bl. 1kil. 1fir. 1gal. 1qt. 1pt.	26.	732yd. 6qr.
22.	3bl. 0kil. 0fir. 1gal. 1qt.	27.	5T. 24ft. 144in.
		28.	15c. 3ft. w.
		29.	42y. 111d.
		30.	10d. 10h.

SECTION '12.

1.	Performed.	8.	2yd. 2qr.
2.	6s. 7d. 3qr., 2 far- things being undivided.	9.	11bu. 2pk. 7qt.
3.	£3 6s. 11d. 3qr.	10.	1 pint.
4.	8s. 8d.	11.	1hhd. 42gal. 3qt.
5.	Performed.	12.	7m. 2fur. 14r.
6.	£12 8s. 9d. 2qr., 26 farthings undivided.	13.	56m. 4fur. 30r.
7.	1cwt. 3qr. 2lb.	14.	5A. 2R. 23r.
		15.	221A. 1R. 30r.
		16.	1d. 10h. 2m. 15s.

CHAP. VI.

FRACTIONS.

SECTION 1.

1.	Performed.	6.	$\frac{15}{18}$
2.	$\frac{7}{8}$	7.	$\frac{64}{74}$
3.	$\frac{15}{19}$	8.	$\frac{2}{3}$ or 1
4.	$\frac{13}{16}$ of a dollar.	9.	$\frac{82}{114}$
5.	$\frac{21}{23}$		

SECTION 2.

1.	$\frac{6}{8}$	3.	$\frac{25}{43}$
2.	$\frac{14}{20}$	4.	$\frac{1}{100} \frac{2}{100} \frac{6}{100} \frac{25}{100} \frac{99}{100}$

SECTION 3.

1.	Performed.	8.	$\frac{11}{18}$
2.	$\frac{5}{10}$	9.	$\frac{19}{124}$
3.	$\frac{3}{9}$	10.	$\frac{254}{566}$
4.	$\frac{5}{19}$	11.	$\frac{9}{34}$
5.	$\frac{18}{47}$	12.	$\frac{31}{100}$
6.	$\frac{6}{20}$ of a ton.	13.	$\frac{286}{330}$
7.	$\frac{2}{8}$		

SECTION 4.

1.	$\frac{1}{5} \frac{3}{5}$	8.	$\frac{1}{8} \frac{7}{8}$
2.	$\frac{1}{10} \frac{2}{10} \frac{5}{10} \frac{9}{10}$	9.	$\frac{1}{63} \frac{18}{63}$
3.	$\frac{1}{20} \frac{6}{20} \frac{14}{20}$	10.	\$12. \$63
4.	$\frac{1}{35} \frac{8}{35} \frac{11}{35} \frac{34}{35}$	11.	$\frac{1}{365} \frac{10}{365} \frac{40}{365} \frac{100}{365} \frac{275}{365}$
5.	$\frac{1}{100} \frac{2}{100} \frac{9}{100} \frac{46}{100} \frac{94}{100}$	12.	\$14. \$190. \$365
6.	$\frac{1}{6} \frac{5}{6}$	13.	$\frac{1}{2016} \frac{84}{2016} \frac{759}{2016}$
7.	$\frac{1}{12} \frac{7}{12}$		

SECTION 5.

1.	\$9 406	9.	308
2.	9 406	10.	55 216
3.	213 bushels.	11.	\$11.99
4.	213	12.	408 miles.
5.	3 500	13.	11 220
6.	9 500	14.	\$138
7.	1 380 men	15.	14cwt. 1qr. 24lb.
8.	1 380		

SECTION 6.

1.	63 bushels.	8.	52 cents.
2.	63	9.	\$1784.15
3.	12 802 needles.	10.	\$12.82
4.	12 802	11.	\$2 67 5
5.	79 quills.	12.	24
6.	219 meals.	13.	7vd. 2or. 1na.
7.	288 cubic inches		

SECTION 7.

1	\$35	5.	$\frac{1}{170}$. 39 bushels.
2.	$\frac{1}{8}$. \$492	6.	$\frac{1}{6}$. £1 18s. 7d. 2qr.
3.	$\frac{1}{27}$. 32 acres.	7.	\$4.20
4.	$\frac{1}{63}$. \$2.15		

SECTION 8.

1.	\$3224	10.	Performed.
2.	1 270	11.	35 091
3.	11 896 ears.	12.	38
4.	7 149	13.	\$268.64
5.	\$36.12	14.	115gal. 2qt.
6.	54 quills.	15.	\$89.46
7.	27 gallons.	16.	\$803.48
8.	£15 14s. 5d.	17.	\$1.68
9.	1888		

SECTION 9.

1.	$\frac{3}{8}$. \$257.46	5.	192 rods.
2.	$\frac{14}{33}$. 84 yards.	6.	\$3 800
3.	$\frac{2}{13}$. 169bu. 3pk. 4qt.	7.	950 miles.
4.	342 bushels.	8.	£31 15s. 3d.

SECTION 10.

1.	455 trees.	6.	1750
2.	455	7.	\$58.24
3.	\$195.69	8.	\$58.24
4.	\$195.69	9.	\$314.40
5.	1750 pounds.	10.	75 pounds.

SECTION 11.

1.	14bu. 70bu.	8.	\$44.87
2.	\$7.50. \$60	9.	528 miles.
3.	\$60	10.	216 men.
4.	21 miles. 252 miles.	11.	216
5.	252	12.	\$1840
6.	\$5.75. \$97.75	13.	\$120.75
7.	\$97.75		

SECTION 12

1.	$\frac{93}{100}$ of a dollar.	7.	$\frac{1}{14}$. 5 books.
2.	$\frac{1\frac{1}{2}}{20}$ of a ton.	8.	\$66
3.	$\frac{3}{19}$ of his money.	9.	$\frac{6}{14}$. \$40.14
4.	$\frac{1\frac{1}{2}}{60}$ of an hour.	10.	\$134.25
5.	1300 miles.	11.	39s. or £1 19s.
6.	\$16.50		

SECTION 13.

1.	Performed.	6.	21 $\frac{3}{4}$ bushels
2.	24 $\frac{1}{2}$ yards.	7.	21 $\frac{4}{16}$ hours.
3.	24 $\frac{1}{2}$ times.	8.	87 $\frac{5}{12}$ times.
4.	127 $\frac{4}{5}$ barrels.	9.	1969 $\frac{2}{9}$ times.
5.	127 $\frac{4}{5}$ times.	10.	£21 $\frac{1}{8}$

n*

11.	- $27\frac{9}{20}$ yards.	13.	41 $\frac{16}{17}$ times.
12.	$13\frac{8}{34}$ tons.	14.	15 $\frac{2}{4}$ cwt.

SECTION 14.

1.	Performed.	8.	Performed.
2.	$\frac{34}{2}$ of a sheet.	9.	$4\frac{57}{8}$ of a mile.
3.	$\frac{80}{5}$ of a dollar.	10.	$\frac{1472}{17}$
4.	$\frac{186}{6}$ of a pound.	11.	$\frac{253}{63}$
5.	$\frac{584}{8}$ of a yard.	12.	34 gallons
6.	$\frac{5769}{9}$ $\frac{6410}{10}$	13.	159 yards.
7.	1 134 miles.		

SECTION 15.

1.	Performed.	8.	2 120 pounds.
2.	24 sheets.	9.	Performed.
3.	\$49	10.	35 $\frac{4}{7}$
4.	22 pounds.	11.	\$63 $\frac{3}{8}$
5.	152 yards.	12.	47 gallons.
6.	14 hours.	13.	\$62 $\frac{2}{5}$
7.	13	14.	\$81 $\frac{5}{6}$

SECTION 16.

1.	4	6.	25 674 $\frac{2}{3}$
2.	Performed.	7.	5 419 457 $\frac{46}{68}$
3.	9 452 $\frac{6}{7}$	8.	31 $\frac{3}{8}$ yards.
4.	11 581	9.	56 $\frac{15}{16}$ pounds.
5.	Performed.		

SECTION 17.

1.	28 $\frac{1}{2}$ miles.	2.	28 $\frac{1}{2}$.
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3.	$15\frac{6}{8}$ yards.	5.	$22\frac{2}{3}$ pounds.
4	$15\frac{6}{8}$ times.	6.	$22\frac{2}{3}$

SECTION 18.

1	Performed.	8.	1460
2.	$293\frac{2}{3}$	9.	$1683\frac{1}{16}$ gallons.
3.	$\$274\frac{3}{8}$	10.	$\$3544\frac{7}{100}$
4.	$142\frac{12}{20}$	11.	$3789\frac{6}{18}$ miles.
5.	$132583\frac{24}{48}$	12.	$8\frac{13}{49}$ times.
6.	Performed.	13.	$\$27\frac{75}{100}$
7.	$188747\frac{2}{10}$	14.	$296\frac{2}{16}$ bushels.

SECTION 19.

1	$\$34.37\frac{1}{2}$	5.	$2749\frac{2}{13}$
2.	$277\frac{2}{4}$ miles.	6.	$\$1$
3.	$15021\frac{7}{8}$	7.	$\$7\frac{1}{2}$
4.	$180\frac{5}{6}$ yards.		

SECTION 20.

1.	$\frac{2}{5}$ of $\$1$	7.	$\frac{2}{39}\frac{3}{39}\frac{4}{39}\frac{18}{39}\frac{38}{39}$
2.	$\frac{2}{5}$ of 1	8.	$\frac{28}{3}$ of a bu. $9\frac{1}{3}$ bu.
3.	$\frac{1}{3}$ of a barrel.	9.	$\frac{28}{3}$. $9\frac{1}{3}$
4.	$\frac{5}{6}$ of 1	10.	$\frac{12}{5}$. $8\frac{2}{5}$
5.	$\frac{10}{16}$ of 1 bushel.	11.	$\frac{22}{13}$. $2\frac{3}{13}$
6.	$\frac{10}{16}$ of 1	12.	$\frac{121}{6}$ of $\$1$. $\$120\frac{1}{6}$

SECTION 21.

1.	$\$28\frac{3}{4}$	3.	$158\frac{3}{4}$ acres.
2	$28\frac{3}{4}$	4.	$219\frac{1}{6}$ $66\frac{2}{3}$ $911\frac{2}{3}$

5.	\$45.93 $\frac{4}{12}$	12.	8 drams.
6.	4593 $\frac{4}{12}$ 34 $\frac{15}{28}$ 16 $\frac{12}{43}$	13.	51 $\frac{6}{11}$ gallons.
7.	16 $\frac{8}{23}$ pages.	14.	17 $\frac{8}{16}$ rods.
8.	3 $\frac{2}{6}$ shillings.	15.	123 $\frac{3}{7}$ square inches.
9.	15 $\frac{5}{9}$ shillings.	16.	3000 seconds.
10.	7 $\frac{1}{2}$ pence.	17.	\$23.31
11.	14 $\frac{4}{10}$ grains.		

SECTION 22.

1.	38 $\frac{31}{4}$ of a bu.	5.	\$2
2.	38 $\frac{31}{4}$	6.	132 $\frac{13}{16}$ pounds.
3.	\$61 $\frac{6}{8}$	7.	\$118 $\frac{9}{12}$
4.	61 $\frac{6}{8}$ 457 $\frac{8}{10}$ 96 $\frac{6}{14}$	8.	55 $\frac{15}{21}$ bushels.
	57365	9.	37bu. 1pk. 0qt. 1pt.

SECTION 23.

1.	\$1.35 $\frac{2}{4}$	15.	2012 $\frac{2}{4}$ miles.
2.	\$4.06 $\frac{2}{4}$	16.	2012 $\frac{2}{4}$
3.	\$13.28 $\frac{4}{7}$	17.	582 $\frac{2}{5}$ 1232 $\frac{8}{9}$ 935 $\frac{6}{6}$
4.	\$66.42 $\frac{6}{7}$		4764 $\frac{4}{7}$ 16332 $\frac{6}{10}$
5.	470 $\frac{5}{8}$ 2823 $\frac{6}{8}$	18.	Performed.
6.	14gal. 98 gal.	19.	1 2
7.	16675 $\frac{5}{9}$ feet.	20.	\$7
8.	1333 $\frac{33}{99}$ miles.	21.	\$155
9.	\$750	22.	\$255
10.	\$10.71 $\frac{3}{7}$	23.	\$5.55
11.	\$136.50	24.	\$5.31
12.	284 $\frac{4}{9}$ rods.	25.	25 $\frac{13}{100}$ gallons.
13.	84375 pounds.	26.	Performed.
14.	8437 $\frac{4}{8}$	27.	\$176.19

- | | | | |
|--------------------------|---|-----|---|
| 28. | \$ 3.60 | 52. | \$ 1.63 $\frac{8}{12}$ for 4m. |
| 29. | \$ 2.80 $\frac{56}{100}$ | | \$ 2.04 $\frac{7}{12}$ for 5m. |
| 30. | \$ 42.34 $\frac{14}{100}$ | | \$ 2.45 $\frac{6}{12}$ for 6m. |
| 31. | \$ 530.23 $\frac{85}{100}$ | | \$ 2.86 $\frac{5}{12}$ for 7m. |
| 32. A, \$ 470. B, \$ 530 | | | \$ 3.27 $\frac{4}{12}$ for 8m. |
| 33. | 31 cents. | | \$ 3.68 $\frac{3}{12}$ for 9m. |
| 34. | \$ 2.79 | | \$ 4.09 $\frac{2}{12}$ for 10m. |
| 35. | 82 cents. | | \$ 127.25 $\frac{6}{12}$ amount. |
| 36. | \$ 13.12 | 53. | 94 $\frac{3}{12}$ cents. |
| 37. | \$ 535.19 | 54. | \$ 4.87 $\frac{4}{6}$ |
| 38. | \$ 4.80 | 55. | \$ 530.13 $\frac{1}{2}$ |
| 39. | \$ 6.24 $\frac{15}{90}$ | 56. | \$ 10.61 $\frac{2}{3}$ |
| 40. | \$ 4.76 | 57. | \$ 110.41 |
| 41. | \$ 347.10 | 58. | \$ 17.01 |
| 42. | \$ 5. \$ 105 | 59. | \$ 177.62 $\frac{1}{2}$ |
| 43. | 5 cents. \$ 1.05 | 60. | \$ 36.52, first pay-
ment. \$ 79.16 $\frac{1}{2}$
second payment. |
| 44. | \$ 21.24 for 1y.
\$ 42.48 for 2y.
\$ 63.72 for 3y.
\$ 84.96 for 4y.
Amount, \$ 438.96 | 61. | 26 cents. |
| 45. | \$ 9.72 \$ 50.22 | 62. | 12 cents. |
| 46. | \$ 3.78 \$ 21.78 | 63. | 88 cents. |
| 47. | \$ 13 456 | 64. | \$ 2.89 |
| 48. | \$ 1067.55 \$ 7 537.55 | 65. | \$ 2.69 |
| 49. | 17 $\frac{6}{12}$ cts. \$ 35.17 $\frac{6}{12}$ | 66. | \$ 17.51 |
| 50. | 24 $\frac{6}{12}$ cents. | 67. | \$ 420.70 |
| 51. | \$ 53.63 $\frac{3}{4}$ | 68. | \$ 190.23 |
| | | 69. | \$ 9.52. |
| | | 70. | \$ 4.82. |
| | | 71. | \$ 28.38 |
| | | 72. | \$ 7.32 |

73.	\$3.11	78.	\$141.50 $\frac{50}{100}$
74	\$20.38	79.	\$1490.90 $\frac{10}{100}$
75	He loses 8 cents.	80.	34 $\frac{4}{3}$ cents.
76.	\$6.93	81.	\$64.37 $\frac{17}{100}$
77.	\$13.98 $\frac{6}{100}$		

SECTION 24.

1.	\$39.62 $\frac{1}{2}$	\$158.49 $\frac{1}{2}$	5.	22 677 $\frac{4}{8}$
2.		15 849 $\frac{1}{2}$	6.	\$271.42 $\frac{6}{100}$
3.	50 cents.	\$6	7.	\$175
4.	8 $\frac{1}{3}$ bu.	212 $\frac{1}{3}$ bu.		

SECTION 25.

1.	$\frac{15}{24}$	4.	$\frac{35}{45}$
2.	$\frac{6}{14}$	5.	$\frac{13}{40}$
3.	$\frac{18}{18}$ or 1		

SECTION 26.

1.	$\frac{1}{2}$ $\frac{2}{3}$ $\frac{1}{3}$ $\frac{3}{4}$ $\frac{2}{3}$ $\frac{1}{3}$ $\frac{2}{3}$ $\frac{1}{2}$	4.	5
2.	$\frac{1}{3}$ $\frac{1}{4}$ $\frac{1}{3}$ $\frac{3}{4}$ $\frac{1}{10}$ $\frac{1}{2}$ $\frac{1}{40}$	5.	$\frac{8}{21}$
3.	Performed.	6.	$\frac{1}{3}$ $\frac{32}{84}$ $\frac{323}{425}$

SECTION 27.

1.	$\frac{1}{3}$	7.	$\frac{27}{187}$
2.	$\frac{1}{24}$	8.	$\frac{1}{12}$ of 1s. $\frac{1}{240}$ of £1
3.	$\frac{1}{2}$	9.	$\frac{7}{240}$ of £1
4.	$\frac{7}{16}$ of an acre.	10.	$\frac{1}{48}$ of an ounce.
5.	$\frac{28}{45}$	11.	$\frac{3}{16}$ of a yard.
6.	$\frac{1}{2}$ of 1	12.	$\frac{1}{3}$ of a yard.

- | | | | |
|-----|--------------------------------|-----|---|
| 13. | $\frac{1}{144}$ of an hour. | 28. | Performed. |
| 14. | $\frac{1}{10}$ | 29. | 13s. 4d. |
| 15. | $\frac{3}{25}$ of 1 | 30. | 8s. 10d. $2\frac{6}{7}$ qr. |
| 16. | $\frac{2}{169}$ | 31. | 4d. 2qr. |
| 17. | Performed. | 32. | £15 11s. 5d. 0 $\frac{1}{2}$ |
| 18. | $\frac{25}{192}$ of £1 | 33. | 3qr. 3lb. 1oz. $12\frac{1}{4}$ dr. |
| 19. | $\frac{47}{960}$ of £1 | 34. | 9lb. 9oz. $9\frac{6}{10}$ dr. |
| 20. | $\frac{241}{320}$ of £1 | 35. | 4fur. 17r. 12ft. 10in. |
| 21. | $\frac{41}{48}$ of a shilling. | 36. | 10A. 1R. 5r. 193ft. |
| 22. | $\frac{679}{4800}$ of £1 | | 210 $\frac{6}{7}$ in. |
| 23. | $\frac{1}{28}$ of £1 | 37. | 5 dimes, 8 cents, $3\frac{1}{3}$ mills. |
| 24. | $\frac{11}{64}$ of a bushel. | 38. | 45 cents, $4\frac{6}{11}$ mills. |
| 25. | $\frac{79}{504}$ of 1 hhd. | 39. | 9cwt. 1qr. 17lb. |
| 26. | $\frac{1}{48}$ of a mile. | | |
| 27. | $\frac{351}{864000}$ of a day. | | |

SECTION 28.

- | | | | |
|----|---|-----|--|
| 1. | Performed. | 7 | $1\frac{147}{225}$ |
| 2. | $\frac{60}{150} \frac{60}{150} \frac{50}{150}$ | 8. | $1\frac{125}{350}$ |
| 3. | $\frac{165}{210} \frac{84}{210}$ | 9. | $\frac{17}{60}$ |
| 4. | $\frac{120}{240} \frac{60}{240} \frac{152}{240}$ | 10. | $\frac{8}{51}$ |
| 5. | $\frac{240}{420} \frac{140}{420} \frac{168}{420} \frac{105}{420}$ | 11. | $\frac{7}{18}$ is $\frac{5}{198}$ greater. |
| 6. | $\frac{50}{63}$ | | |

SECTION 29.

- | | | | |
|----|----------------------------|----|------------------------------|
| 1. | $380\frac{7}{24}$ bushels. | 6. | $46\frac{61}{72}$ gallons. |
| 2. | $160\frac{19}{360}$ acres. | 7. | $287\frac{41}{220}$ |
| 3. | $3063\frac{121}{520}$ | 8. | $\frac{37}{91}$ of the loaf. |
| 4. | $2\frac{4}{21}$ | 9. | $6\frac{17}{60}$ barrels. |
| 5. | $1221\frac{13}{20}$ | | |

SECTION 30.

1.	24 men.	8.	$3\frac{1}{2}$ times.
2.	24 times.	9.	$4\frac{4}{5}$ times.
3.	24 pairs.	10.	$7\frac{3}{5}$ barrels.
4.	24	11.	$3\frac{26}{181}$ times.
5.	115	12.	$6\frac{98}{265}$ times.
6.	$13\frac{1}{3}$ miles.	13.	$2\frac{46}{57}$ barrels.
7.	$13\frac{1}{3}$ times.		

SECTION 31.

1.	$45\frac{41}{95}$ days.	14.	$1\frac{6}{13}$
2.	117 pounds.	15.	$82\frac{1}{2}$ acres.
3.	\$4.68 $\frac{3}{4}$	16.	$14\frac{139}{735}$
4.	$37\frac{1}{4}$ yards.	17.	$\frac{7}{45}$
5.	\$2 $\frac{11}{20}$	18.	$18\frac{86}{91}$ hours.
6.	$4847\frac{1}{2}$ bushels.	19.	$\frac{361}{366}$
7.	\$554.96 $\frac{1}{10}$	20.	$\frac{8}{1885}$
8.	$\frac{7}{6}$ 11 $\frac{5}{6}$	21.	$3808\frac{203}{232}$
9.	\$23.80 $\frac{40}{42}$	22.	$27931\frac{3}{7}$
10.	$197\frac{2}{14}$ cords.	23.	$\frac{1176}{2255}$
11.	$177\frac{1}{7}$ days.	24.	$1\frac{255}{384}$
12.	$77\frac{1}{7}$ days.	25.	$4981\frac{1}{11}$
13.	$\frac{6}{5}$ $\frac{24}{36}$ $\frac{50}{75}$	26.	$12\frac{8}{105}$

SECTION 32.

1.	11d. 8h.	5.	\$1162
2.	\$1.66 $\frac{2}{3}$	6.	$552\frac{72}{219}$ men.
3.	$8\frac{23}{224}$ cents.	7.	\$40.90 $\frac{10}{11}$
4.	37bu. 1pk. 6qt. $0\frac{56}{65}$ pt.	8.	\$1323

9.	A, \$236.60	To St. Louis, 884m.
	B, \$263.90	To Natchez, 1394m.
10.	13 $\frac{65}{72}$	To N. Orleans, 1468m.
11.	To Augusta, 622m.	From N. O. to A.
	To Detroit, 520m.	2090m.

		d.	h.	m.	s.
12.	From Baltimore,	in	5	25	42 $\frac{6}{7}$
	Philadelphia,	"	1	9	42 $\frac{3}{4}$
	New York,	"	3	2	34 $\frac{1}{2}$
	Hartford,	"	5	0	8 $\frac{2}{3}$
	Boston,	"	6	4	25 $\frac{6}{7}$
	Portland,	"	8	1	17 $\frac{4}{7}$
	Augusta, Me.	"	8	8	51 $\frac{5}{7}$
	Albany,	"	5	4	8 $\frac{2}{3}$
	Montpelier,	"	8	7	17 $\frac{4}{7}$
	Pittsburgh,	"	3	1	25 $\frac{6}{7}$
	Buffalo,	"	5	4	17 $\frac{4}{7}$
	Detroit,	"	7	4	17 $\frac{4}{7}$
	Wheeling,	"	3	7	42 $\frac{3}{4}$
	Cincinnati,	"	7	0	34 $\frac{1}{2}$
	Vandalia,	"	11	3	25 $\frac{6}{7}$
	St. Louis,	"	12	6	17 $\frac{4}{7}$
	Louisville,	"	8	6	17 $\frac{4}{7}$
	Nashville,	"	11	6	17 $\frac{4}{7}$
	Tuscaloosa,	"	14	9	8 $\frac{2}{3}$
	Natchez,	"	19	9	8 $\frac{2}{3}$
	Richmond,	"	1	7	34 $\frac{1}{2}$
	Raleigh,	"	4	1	8 $\frac{2}{3}$
	Charleston,	"	7	7	42 $\frac{3}{4}$

		d.	h.	m.	s.
From Savannah,	in	9	3	51	25 $\frac{5}{7}$
Tallahassee,	"	14	1	8	34 $\frac{2}{7}$
Mobile,	"	18	6	51	25 $\frac{5}{7}$
New Orleans,	"	20	9	42	51 $\frac{3}{7}$
Norfolk,	"	3	3	51	25 $\frac{5}{7}$
Augusta, Ga.	"	8	2	34	17 $\frac{1}{7}$

13.

14. Between Charleston
and Raleigh. 121
miles from C., 135
miles from R.

15. Between Boston and
Hartford; 57 miles
from Boston.

16. A, \$142.85 $\frac{5}{7}$
B, \$285.71 $\frac{3}{7}$
C, \$571.42 $\frac{6}{7}$

17. 10lb. sulphur.
14lb. charcoal.
76lb. nitre.

18. A's share, \$2.81 $\frac{1}{4}$
B's share, \$2.18 $\frac{3}{4}$

19. C's share, \$88.78 $\frac{28}{74}$
D's share, \$57.21 $\frac{46}{74}$

20 \$80.73

21. E, 113A. OR. 12 $\frac{4}{13}$ r.

F. 131A. 3R. 27 $\frac{2}{13}$ r.

22. 237 50Q families.

23. 8 $\frac{2}{11}$ days.

24. 5 $\frac{10}{17}$ days.

25. 6 $\frac{2}{3}$ days.

26. 9 $\frac{3}{5}$ days.

27. 20 yards.

28. 5 $\frac{5}{6}$ yards.

29. 26 yards.

30. 3 240 bricks.

31. $\frac{47}{60}$ of 1A. 11 $\frac{23}{47}$ days.

32. $\frac{37}{60}$ of it.

1h. 37m. 17 $\frac{31}{37}$ s.

33. 176ft. 1 $\frac{1}{4}$ in.

34. \$43.27 $\frac{3}{11}$

35. 136 $\frac{4}{11}$ rods.

36. 175 pounds.

37. 48

38. A, \$16.66 $\frac{2}{3}$

B, \$13.33 $\frac{1}{3}$

39. $6\frac{32}{203}$ times greater than New-York.
 $7\frac{81}{167}$ times greater than Philadelphia.
 $15\frac{2}{8}$ times greater than Baltimore.
 $20\frac{30}{61}$ times greater than Boston.
40. 2 492 782
 41. 34 014
 42. 26 680
 43. 11 944

SECTION 33.

1. .3 .46 .703 .1 642 .96 041
 2. 38.5 516.22 8.354 24.7 636
 3. .04
 .007
 .0003
 .00006
 .000008
4. Six *hundredths*.
 Eight *thousandths*.
 Thirteen *thousandths*.
 Five hundred and fourteen *ten-thousandths*.
 Sixty-five *thousandths*.
 Four hundred and nine *thousandths*.
 Two hundred seven thousand, eight hundred and
 sixty-two *millionths*.
 Five thousand and four *ten-thousandths*.
 Seven *ten-thousandths*.
 Six thousand, two hundred and sixty-four *hundred-thousandths*.
 Ten thousand, eight hundred and nine *hundred-thousandths*.
 Six million, five hundred thousand, one hundred
 and seventy-one *ten-millionths*.

24, and two *hundredths*.

5, and seven hundred sixty-three thousand, and eighty-four *millionths*.

160, and fifty-two *thousandths*.

712, and three thousand and five *ten-thousandths*.

5.	9.06	19.	\$9.927
	8.014	20.	Performed.
	3.101	21.	643.2
	46.051	22.	\$3.60
	7.0305	23.	\$17.82
	65.007	24.	\$73.296
	12.0016	25.	\$258.30
	200.006	26.	\$78.213
	1.4006	27.	\$.0063
	60.008	28.	\$20.424
	8.040607	29.	3012.41164
	26.0000015	30.	1906.872
6.	Performed.	31.	.03068019
7.	1821.1316	32.	2.6303262
8.	3850.7995	33.	.0028
9.	38.729	34.	.000045
10.	54.645	35.	.04230
11.	Performed.	36.	Performed.
12.	7327.464	37.	Performed.
13.	4518.3426	38.	Performed.
14.	15947.8294	39.	2456.7
15.	.72	40.	.04319+
16.	.13933	41.	378000
17.	.954	42.	46.27
18.	\$3.403	43.	3.153+

44.	.365	67.	15cwt. 0qr. 22lb
45.	1.184+		6oz. 6dr.+
46.	.1	68.	5h. 1m. 32s.+
47.	Performed.	69.	2R. 11r. 54ft.+
48.	.5	70.	£15 5 9 3
49.	.666+	71.	16 cents 6 mills+
	.25		33 cents 3 mills+
	.75		50 cents.
	.65		66 cents 6 mills+
	.277+		83 cents 3 mills+
	.4166+	72.	12 cents 5 mills.
	.378+		25 cents.
	.069+		37 cents 5 mills.
50.	\$.562+		50 cents.
51.	\$48.714+		62 cents 5 mills.
52.	£316.625		75 cents.
53.	£ .375		87 cents 5 mills.
54.	£ .75	73.	13 cents 3 mills+
55.	.5625 of 1s.		26 cents 6 mills+
56.	£ .1489+		40 cents.
57.	.0208+ of 1s.		53 cents 3 mills+
58.	£18.1291+		66 cents 6 mills+
59.	.737+ of 1oz.		80 cents.
60.	.1406 of 1bu.		93 cents 3 mills+
61.	.937+ of 1gal.	74.	21 cents 4 mills+
62.	.333+ of 1 mile.		42 cents 8 mills+
63.	\$226.463+		64 cents 2 mills+
64.	Performed.		85 cents 7 mills+
65.	8s. 0d. 3qr.+	75.	\$2.42,7+
66.	10d. 1qr.+	76.	\$1.58,5+

77.	\$2.18,8+	83.	\$674.10
78.	\$4.00,8+	84.	\$103.41,4
79.	\$1.33,3+	85.	\$32.10
	\$1	86.	\$48.67
	\$1.06,6+	87.	\$78.39
	\$1.71,4+	88.	\$238.33
80.	\$14.27,4+	89.	\$2 388.63
81.	\$78.75	90.	\$117 71
82.	\$1687.50		

THE END.

TESTIMONIALS

IN FAVOUR OF

EMERSON'S ARITHMETIC.

BOSTON, MAY, 1832.

THE subscribers, Instructors in the public schools in the city of Boston, avail themselves of the earliest opportunity to express their approbation of Part Second of the North American Arithmetic, by Frederick Emerson. The oral and written exercises being arranged in corresponding chapters and sections, may be taught separately or connectedly: this they deem a very great excellence. The principles are laid down in progressive order, and are illustrated by the inductive method. Fractional arithmetic is skilfully explained, and will no longer puzzle the learner. The work is evidently written with great care and ability. The undersigned therefore confidently hope, its merits will be as fully and freely appreciated by the enlightened friends of education, as were those of Part First.

P. MACKINTOSH, JR.,
C. WALKER,
L. CONANT,
DAVID B. TOWER,
CHARLES FOX,
ABEL WHEELER,

R. G. PARKER,
OTIS PIERCE,
A. ANDREWS,
SAMUEL BARRETT,
JAMES ROBINSON,
BARNUM FIELD.

NEW YORK, OCT. 6, 1832.

I consider the plan and execution of Emerson's North American Arithmetic—Part First and Part Second, with the Key—as perfect a School-Book as I have ever examined. None of this branch of instruction has so well and truly illustrated the subject. It is plain and easy, and the characteristics, which distinguish it as a school-book, are those that should prevail in every introductory work offered for the use of youth.

SAMUEL W. SETON,

[*Visiter for the Public School Society, New York.*]

BRADFORD ACADEMY, Oct. 6, 1832.

Mr. Emerson. Dear Sir,—I have attentively examined a copy of the Second Part of the North American Arithmetic. It is a valuable production, and needs only to be known, that it may be patronized. The questions are well formed, and are *intelligible*. They are also of a practical nature. The illustrations by means of cuts, and the explanations, are happily adapted to the youthful mind, and will be a great assistance to the pupil. It is my intention to introduce the Second Part into the Academy, the next term:—and I do most cordially recommend the book to the attention of Teachers and School Committees.

Yours respectfully, BENJAMIN GREENLEAF,
[*Preceptor of Bradford Academy.*]

P. S. As it respects Part First, but very little need be said. Its general introduction into our Primary Schools in this vicinity, and the happy results that have been the consequence, are the best recommendation it need receive.

Yours, &c. B. G.

PAWTUCKET HIGH SCHOOL, 5th Month, 4, 1832.

[*Addressed to the Publishers.*] I received, two days since, a copy of the Second Part of the North American Arithmetic, every section of which I have examined. Although many valuable improvements have been made in the science, yet I have long considered a treatise on Arithmetic, well adapted to the purposes of instruction, a desideratum—and, though my scholars are now supplied with *other* Arithmetics, I shall adopt the above, at my *own* expense, in their stead. Therefore, please send me, immediately, 75 copies of the Arithmetic, and 6 Keys.

Yours respectfully, JOSEPH HEALY,
[*Principal of the Pawtucket High School.*]

ANDOVER, PHILLIPS ACADEMY, Oct. 7, 1832.

Mr. Emerson. Dear Sir,—I have examined with care, and with much pleasure, the First and Second Parts of the North American Arithmetic.

Amidst the various and important improvements in the numerous systems of Arithmetic which have been published

within a few years, I think that the design and execution of yours are such as will prove highly useful to the community, and, when completed, will receive an extended patronage, worthy of its NAME.

With sentiments of respect,

I am, dear Sir, your ob't serv't,

JOHN ADAMS,
[Principal of Phillips Academy.]

NEW IPSWICH ACADEMY, JUNE 20, 1832.

[Conclusion of a Letter to the Author.] The work needs no recommendation from me; but it gives me pleasure to express my favorable opinion of it, and my sincere desire that Arithmetic may soon be generally taught on the plan which you recommend. Should it be introduced into District schools generally, in all its parts, I am persuaded that intelligent instructors of higher seminaries would soon see the effects of it in the diminished number of those, who repair to such seminaries, thinking that they know all about Arithmetic, and yet knowing nothing about it as they ought to know.

Respectfully yours,

ROBERT A. COFFIN,
[Preceptor of New Ipswich Academy.]

WILLIAMS COLLEGE, OCT. 2, 1832.

To Mr. Frederick Emerson. Sir,—I have received the First and Second Parts of your North American Arithmetic, and am highly pleased with the plan of the work, and the manner of its execution thus far. It unites simplicity with fulness, and will thus be sure to interest the beginner, whilst it furnishes, at the same time, an ample guide to the more advanced pupil. Respectfully and truly yours,

ALBERT HOPKINS,
[Professor of Mathematics and Natural Philosophy
in Williamstown College.]

BOSTON, OCT., 1832.

[Conclusion of a Letter to the Publishers.] The North American Arithmetic is not a mere repetition of other pub-

lications on the subject. It is an original work;—original in its plan,—original in its execution,—original in its arrangement and questions,—original in every thing, excepting the use of the inductive method. I think the author has been peculiarly happy in the *unity* and *system* of his treatise,—in the arrangement of oral and written exercises in corresponding chapters, and, especially, in his mode of treating fractions. I am acquainted with no school-book that I could with more confidence recommend to the notice of teachers, and others interested in the subject of elementary education.

E. BAILEY,

[*Principal of the Young Ladies' High School, Boston.*]

BURLINGTON, 15th FEB., 1833.

[*Conclusion of a Letter to the Author.*] I should think it hardly possible that a child could be faithfully conducted through these two works [First and Second Parts], without being vastly better acquainted with the subject than children formerly were. Being judiciously compelled in some measure to invent their own rules, they can scarcely fail of being able to assign a proper reason for the process, as well as to recollect it for future use. Indeed, I do not know any one particular in which, for the use of very young pupils, they could be improved.

Yours respectfully,

JAMES DEAN,

[*Professor of Mathematics and Natural Philosophy in the University of Vermont.*]

MAINE WESLEYAN SEMINARY, OCT. 2, 1832.

Mr. Frederick Emerson. Dear Sir,—Having carefully examined the *First* and *Second Parts* of the North American Arithmetic, I have no hesitation in expressing my full approbation of the plan and execution of the work. In *Part First*, the character of the questions, and the illustrations, addressed as they are to the eye, adapt it very fully to the capacities of children, for whom it was designed. In both *Parts*, the attention devoted to oral Arithmetic, which seems to recognise the importance of *intellectual culture*, not less than that of *practical knowledge*, in the pursuit of this *science*; the natural order in which the principles of the

science are developed; the number and variety of the examples given under the several rules; the strict adherence to the *inductive system*; and the frequent hints to teachers, which are often of great utility,—all seem, to me at least, to give it a claim on the attention of Teachers and School Committees, and to promise its general introduction into our common schools, and, in connexion with *Part Third* (yet to be published) into our higher seminaries.

Very respectfully yours, MERRITT CALDWELL,
[Principal of the Maine Wesleyan Seminary.]

BROWN UNIVERSITY, OCT. 15, 1833.

[*Conclusion of a Letter to the Publishers.*] I have no hesitation in saying, that I consider Mr. Emerson's Second Part of the North American Arithmetic a work of great merit. For the use of beginners, I know of none superior. The subject is well arranged, and each particular part presented in a clear and interesting manner. I cheerfully recommend it to public patronage. Yours, &c.

A. CASWELL,
[Professor of Mathematics in Brown University.]

MIDDLEBURY COLLEGE, OCT. 15, 1832.

[*Conclusion of a Letter to the Author.*] I think the work eminently suited to the purpose for which it is designed. I am acquainted with no book on the subject equally calculated to awaken curiosity, and train the mind to habits of investigation. A great part of the difficulties, which students meet with in the higher branches of the mathematics, would be obviated, could such a work as yours be generally introduced into schools, and made familiar in the earliest stages of education. You have, of course, my best wishes for your success. Yours, with much respect,

EDWARD TURNER,
[Professor of Mathematics and Natural Philosophy in Middlebury College.]

WATERVILLE COLLEGE, OCT. 4, 1832.

[*Conclusion of a Letter to the Author.*] Your method of fractions I have examined thoroughly, and prefer it to all

others I have seen in our popular works on Practical Arithmetic. Your books seem to have been written in a strictly analytical method, and with a knowledge of those little difficulties which so often confound the inexperienced teacher.

I am, Sir, with much respect,

GEORGE W. KEELY,

[*Professor of Mathematics in Waterville College.*]

HALLOWELL, Nov. 12, 1832.

The subscriber was much gratified with his first examination of the "North American Arithmetic," especially with that portion of the "Second Part" which treats of fractions; and it gives him pleasure to say, that subsequent use has fully confirmed his original good opinion of the work. It has been introduced into his school, and has been found to furnish uncommon facilities to the teacher and the pupil. For plainness of expression—aptness of illustration—simplicity of arrangement, and propriety of selection—it yields, in his opinion, to no elementary work of the kind now used.

DANIEL R. GOODWIN,

[*Principal of Hallowell Academy.*]

NEW HAVEN, Nov. 25, 1832.

Mr. F. Emerson. Dear Sir,—I have omitted hitherto to acknowledge the receipt of a copy of the First and Second Parts of your Arithmetic, that I might take time to examine it with some attention. This purpose I have now in some degree accomplished, and it is with much pleasure, that I acknowledge the great satisfaction that I have derived from its perusal. Although there are several Arithmetics already before the public, which enjoy a merited popularity, we have felt, that a text-book, convenient for our purpose, was still a desideratum, and are happy to find, that that want can be supplied by your book. We have adopted the Second Part as our text-book for the younger classes in the Institute, and, so far as we can judge from our experience hitherto, we have reason to be perfectly satisfied with our choice. With the highest respect I remain,

Dear Sir, your friend and humble serv't,

E. A. ANDREWS,

[*Principal of the New Haven Young Ladies' Institute.*]

PHILADELPHIA, JAN 13, 1833.

[*Conclusion of a Letter to the Author.*] It gives me great satisfaction to observe the gradual introduction into our treatises for children, of the method of induction, so effectual in its developement of their intellectual resources, and so superior to the dogmatic method formerly in use. Until within a few years, the plan which you have adopted was unknown among us; and it is not perhaps remarkable, that a bigoted attachment to things familiar, and a want of power and inclination to investigate the philosophical principles on which the mind is to be cultivated, should have conspired to render the rational system slow in its advances. The addition which you have made to the class of works above mentioned, will, I trust, be eminently useful in rendering the study of Arithmetic both easy and profitable. Your combination of intellectual and written exercises must commend itself to every teacher.

Yours truly,

WALTER R. JOHNSON,

[*Principal of the Philadelphia High School.*]

UNION COLLEGE, SCHENECTADY, FEB. 8, 1833.

Mr. F. Emerson. Sir,—I have received the First and Second Parts of the North American Arithmetic, and examined them with pleasure. The relations of numbers are happily illustrated by the relations of sensible objects. This renders the work more entertaining and instructive, at that age to which Arithmetic is better adapted than many of those studies which, for want of a system like this, are too often introduced. Here the student will acquire not merely rules to guide his hand, but principles to enlighten his understanding. He is not furnished with a mere mill for grinding numbers into a certain result under cover. Wishing you continued success,

I am, Sir, respectfully,
your ob't serv't,

B. F. JOSLIN,

[*Professor of Mathematics and Natural Philosophy in Union College.*]

ATHENS, OHIO, FEB. THE 1st, 1833.

Mr. Emerson. Dear Sir,—I have carefully and attentively examined the “First and Second Parts” of “The North American Arithmetic,” and can say, with pleasure, that the work meets my cordial approbation. You have, perhaps, rendered Arithmetic as highly interesting to the youthful mind, as the nature of the subject will admit. Your method of illustrating the fundamental principles of fractions is clear, forcible, and peculiarly happy in its adaptation to the minds of youth.

I am yours, &c. with the
highest respect and esteem,

WILLIAM WALL,

[*Professor of Mathematics in the Ohio University.*]

NASHVILLE UNIVERSITY, FEB. 5th, 1833.

Mr. Frederick Emerson. Sir,—I have examined Parts First and Second of the North American Arithmetic with much satisfaction, and think the work, thus far, better adapted to awaken interest, and excite inquiry in the youthful mind, than any elementary treatise which I have seen. The arrangement is natural, the questions simple and practical, and the rules clearly and fully expressed. I esteem it a work of merit, and hope it will be duly patronized.

Respectfully yours, JAMES HAMILTON,

[*Prof. Math., Nat. Phil. and Astronomy
in Nashville University.*]

REMARKS BY THE PUBLISHERS.

The publishers of this work feel justified in saying, that no school-book has ever appeared in the United States, which has met with such universal and earnest approval from the friends of education, as the North American Arithmetic. The work consists of two parts, bound up in two books.

EMERSON'S FIRST PART is a small book, suitable for classes of children from five to eight years of age, and does not require the use of a slate. It is conveniently used, not only by the younger scholars in schools taught by mas-

ters, but also in primary schools, taught by females. Price of Part First, 12½ cents.

EMERSON'S SECOND PART is a larger book, containing a system of Mental and Written Arithmetic, sufficiently extensive for all the purposes of common business. Although Part Second is peculiarly suitable for the use of classes that have been through with Part First, still, it will be found perfectly convenient for scholars who have never studied Part First; for the author being aware that, in many of our schools, Arithmetic is at present erroneously deferred till the pupil is ten or eleven years of age, (and of course too old to begin with Part First,) has provided for the present wants of such schools, by fitting Part Second for beginners of such advanced age. This has been effected, without injuring the connexion of the two books, for the use of learners who begin the study at an earlier age, in Part First. Price of Part Second, 37½ cents.

So great has been the exertion, within a few years, to press new school-books upon the public; so indiscriminately have high encomiums been bestowed upon every character of school-book; and so often has the "highly recommended" book been found to contain nothing of peculiar value, that the public have become regardless of school-book advertisements, and it is now difficult to gain attention, even to an *original work, which does really possess extraordinary advantages*. The Publishers of the North American Arithmetic are, however, convinced that, wherever they can get the work examined, it will be approved. Although the Second Part has been published but a few months, it is already introduced into a great number of academies and common schools; and the Publishers believe that, in *every instance* where a committee have examined the work, in comparison with others, *it has uniformly received the preference*. Some committees, that had but recently adopted an Arithmetic, and did not see fit to subject their schools to the expense of an immediate change, have still been so strongly impressed with the advantages of this work, that they have ordered its introduction *gradually*, allowing all scholars, who might thereafter have occasion to purchase a new Arithmetic, to take the North American.

To the friends of Education, it cannot be a matter of indifference, that a radical improvement may easily be effected in a department of instruction which is, at present, notoriously defective. All will agree with the author of the North American Arithmetic in the following remark, which he makes in his Preface :

“The mode of teaching Arithmetic, and the text-books used for the purpose, in a great portion of our country, are radically defective. Much of Arithmetic is *practised* at school, but little is *learned*. The scholar is put to *ciphering* without adequate mental preparation, and is referred to the direction of *rules*, whose phraseology and principles are to a learner equally obscure. By a tedious course of practice, perhaps he acquires a certain mechanical dexterity in performing operations ; but no sooner does he enter upon the business of life, than he abandons the rules of this book, and, *in his own way*, learns so much of Arithmetic as his occupation requires.”

The evil here stated by our author has long been felt and regretted ; but, until now, a remedy has never been offered. School Committees and Instructors, while they have met with no difficulty in selecting a satisfactory spelling-book, reading-book, geography and grammar, have seldom if ever been satisfied with any Arithmetic they could find ; and, therefore, have not unfrequently allowed their scholars to use whatever Arithmetic they could most conveniently obtain. The consequence has been, that those Arithmetics which could be published with the least expense for copyright, and those which have happened to be in the hands of the most enterprising publishers, have been most circulated, as matter of merchandise, and most in common use.

Parents frequently complain of the expense of changing the school-books of their children, and perhaps, sometimes, not without reason. This difficulty, however, so far as relates to changing an *Arithmetic*, may be avoided ; for such is the mode of conducting the study of Arithmetic, in our district schools, that the books used in this branch may be changed *gradually*, and without any additional expense. The scholars do not commonly pursue the study of *Arithmetic in large classes*, as they pursue spelling, reading, and

grammar: they pursue Arithmetic *individually*, or in *small sections* of five or six pupils each; hence different individuals, or sections in the same school, may be using different books. Therefore, any School Committee that shall believe the North American Arithmetic to be better fitted for the purposes of instruction than the Arithmetics now in their schools, need only order, or recommend, that, *whenever a scholar shall have occasion to purchase a new Arithmetic, he shall take the North American.* Such an order was passed by the Boston School Committee, for introducing Part First; and the order has proved effectual, without occasioning any trouble. It should here be observed, that the North American Arithmetic is rendered perfectly convenient for class teaching, and the teacher is thereby enabled to instruct a class of twenty scholars in the same time that is required for instructing an individual.

A KEY TO EMERSON'S SECOND PART, for the use of Teachers, is published separately. It contains *Solutions* to many of the questions in the Oral Arithmetic, and *Answers* to all the examples in the Written Arithmetic.

The North American Arithmetic is published by **RUSSELL, ODIORNE & CO. BOSTON**—GLAZIER, MASTERS & Co. Hallowell—HORATIO HILL & Co. Concord—IDE & GODDARD, Windsor—F. J. HUNTINGTON, Hartford—COLLINS & HANNAY, New York—MARSHALL, CLARK & Co. Philadelphia—JOSEPH JEWETT, Baltimore—HUBBARD & EDMANDS, Cincinnati. It has also been republished in Canada and New Brunswick.

Valuable School-Books.

RUSSELL, ODIORNE & CO.

HAVE purchased the miscellaneous stock, and taken the old stand, of 'THE BOSTON BOOKSTORE,' No. 134, Washington street, Boston, formerly HILLIARD, GRAY, LITTLE and WILKINS. They are selecting a full set of choice SCHOOL-BOOKS and CLASSICS, a part of which are already published; and they are determined to engage in the publication of such works only as shall stand the test of criticism, and receive the approval of discriminating teachers. Authors having works of this character in manuscript, are requested to offer them. Particular attention will also be paid to the style of manufacture, as respects printing, paper and binding.

RUSSELL, ODIORNE & Co. have just issued editions of the following works:

THE NORTH AMERICAN ARITHMETIC.

Part Second; uniting oral and written Exercises in corresponding Chapters. By FREDERICK EMERSON, late Principal in the Department of Arithmetic, Boylston School, Boston. [*Noticed in preceding pages.*]

KEY TO EMERSON'S NORTH AMERICAN ARITHMETIC. Part Second. For the use in Teachers. By FREDERICK EMERSON, Author of the North American Arithmetic.

☞ The THIRD PART of the North American Arithmetic, designed for Colleges, and the higher classes of Academies, is in progress, and will soon be published.

FIRST BOOK IN LATIN; comprising the Elements of Latin Grammar, exemplified in a Course of Exercises in Translation and Analysis; by the Aid of Synoptical Tables, in which the Divisions and Nomenclature of the whole Latin Grammar are constantly presented to the Eye, and thus made familiar to the Understanding. By JOHN GILES.

The first twenty pages are occupied by the Models of Declension and Conjugation, arranged in the order most convenient for reference. All the Models of Nouns are found on two pages that lie open at the same time: then come the Pronouns and Adjectives, each class occupying two adjoining pages. The next eight pages contain the Four Model Verbs, each presented entire at a single view, and all the parts of each occupying the same place on the page. After these are, a Tabular View of the Termination of Verbs, Nouns and Adjectives, the Irregular Verbs, and a collection of the Rules and Principles of the Grammar. These Models and Principles are all numbered, and constant reference is made to them from the Second Part of the work. Then follow eighty pages of Exercises for Translating and Parsing. The work is closed by a Dictionary of the Latin words in the volume, thus forming a complete apparatus for commencing the study of Latin.

¶ Preceptors of Academies, and Teachers of Latin Schools generally, are requested to send to the Publishers, RUSSELL, ODIORNE & Co., Boston, for a copy of the First Book in Latin, for examination, which will be furnished gratuitously.

R., O. & Co. have also in preparation, and will publish with all convenient despatch—

THE SECOND BOOK IN LATIN, comprising a complete Latin Grammar, with the Principles and Rules of Syntax separately illustrated by copious Exercises in Translation, Analysis and Parsing, by the aid of Synoptical Tables.

The leading object of this work is to furnish an improved Latin Syntax. It is based on the excellent Syntax of Zumpt; but its divisions and arrangement, and the method of illustration, are peculiar. It will also contain a full development of all the other parts of the Latin Grammar. It is intended to be a book for youth, and will therefore be adapted at once to gratify a youthful curiosity and love of change, to form habits of observation and reflection, and to elicit thought. Every Latin sentence in the book will be subjected to a rigid analysis. It will be a volume of about 300 pages, corresponding in size with the First Book in Latin.

FIRST BOOK IN GREEK. This work is constructed on the plan of the First Book in Latin and the Second Book in Latin, and will embrace the subjects contained in both.

The Greek Verb will be presented under a new arrangement, and brought within the compass of two adjoining pages. The volume will contain about 300 pages, corresponding in size with the First Book in Latin.

ENGLISH GRAMMAR ON THE PRODUCTIVE SYSTEM.—a Method of Instruction recently adopted in Germany and Switzerland; designed for Schools and Academies. By ROSWELL C. SMITH, Author of Practical and Mental Arithmetic, Intellectual and Practical Grammar, &c.

AMERICAN UNIVERSAL GEOGRAPHY, for Schools and Academies, on the Principles of Analysis and Comparison; illustrated with thirty-two Copperplate and Stereotype Maps, besides numerous Engravings, Tables and Diagrams. By Rev. J. L. BLAKE, A. M.

The plan of this work contains some very important peculiarities, which meet the eye at the first glance—so apparent that they need only be seen, in order to be appreciated. From an examination of the sheets, before the book was bound, we received orders for about 4000 copies.

The form is imperial octavo, having twelve copperplate colored Maps, done up with the text. It is also illustrated and enriched by diagrams, statistical tables, and a large number of stereotype Maps for the more important parts of Geography.

“It will be seen, from an examination of the contents, that the present contains three or four times as much matter as several of the school Geographies designed to hold a corresponding rank, now extensively in use. The pages are not only large, but are filled with closely-printed columns, instead of being nearly half blank. Should the American Universal Geography be introduced into schools, where scholars will be unable to go through the whole of it, the extra portions contained in it, as will be readily perceived, can be passed over, without any interruption in studying what is common to all school Geographies. The Historical Sketches, and the description of cities and towns, make these extra portions of the volume, which are so arranged in separate divisions as to have no perplexing connexion with the other parts of it.” [*Extract from the Preface.*]

Among the recommendations which have been given to this work is the following, from the Preceptor of the Portland Academy:

PORTLAND, JULY 11, 1833.

To the Rev. J. L. Blake. Sir,—Having received and examined, with some attention, a copy of your “American Universal Geography,” I have no hesitation in giving it the preference to other works intended for School Geographies, and for the following reasons, viz.: Your Geography contains the copperplate Maps in the same volume with the text; it embraces matter far greater in quantity, and, in my opinion, superior in

quality; it unites History with Geography as History and Geography should be united; and, finally, its value is much enhanced by the stereotype Maps. Yours truly,

B. CUSHMAN,

Portland Academy.

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